Self Diagnosis Supported model

SERVICE MANUAL

BA-4C CHASSIS

MODEL	COMMANDER	DEST	CHASSIS NO.
KV-24FV10	RM-Y168	US	SCC-S22A-A
KV-24FV10	RM-Y168	CND	SCC-S24A-A
KV-25FV10	RM-Y168	E	SCC-S23A-A
KV-25FV10C	RM-Y168	E	SCC-S23C-A



KV-24FV10



RM-Y168

TRINITRON® COLOR TV

SONY®

MICROFILM

SPECIFICATIONS

	KV-24FV10	KV-25FV10/10C
Power Requirements	120V, 60 Hz	Auto Volt (120–220 VAC)
Number of inputs/outputs		
Video Input (1)	2	2
S Video Input (2)	1	1
Audio Input (3)	2	2
Audio Output (4)	1	1
Speaker Output (W)	10W x 2	10W x 2
Power Consumption (W)		
In Use (Max)	150W	150W
In Standby	1W	1W
Dimensions (W/H/D)		
(mm)	652 x 524.3 x 467.3 mm	652 x 524.3 x 467.3 mm
(in)	25 3/4 x 20 11/16 x 18 7/16 in	25 3/4 x 20 11/16 x 18 7/16 in
Mass		
(kg)	40 kg	40 kg
(lbs)	88 lbs. 3 oz.	88 lbs. 3 oz.

1) 1 Vp-p 75 ohms unbalanced, sync negative
2) Y: 1 Vp-p 75 ohms unbalanced, sync negative
C: 0.286 Vp-p (Burst signal), 75 ohms
3) 500 mVrms (100% modulation), impedance: 47 kilohms
4) More than 408 mVrms at the maximum volume setting (variable)
More than 408 mVrms (fix)

Television system
American TV standard/NTSC

Channel coverage
VHF:2-13/UHF:14-69/CATV:1-125

Visible screen size
24" picture measured diagonally

Actual screen size
25" picture measured diagonally

Antenna
75 ohm external terminal for VHF/UHF

Supplied Accessories
Remote Commander RM-Y168 (all models)
Size AA (R6) batteries (2)

Optional Accessories
Dipole antenna
Connecting cables VMC-810S/820S, VMC-720M, YC-15V/30V, RK74A
U/V mixer EAC-66

(●) SRS (SOUND RETRIEVAL SYSTEM)

The (●) SRS (SOUND RETRIEVAL SYSTEM) is manufactured by Sony Corporation under license from SRS Labs, Inc. It is covered by U.S. Patent No. 4,748,669. Other U.S. and foreign patents pending.

The word 'SRS' and the SRS symbol (●) are registered trademarks of SRS Labs, Inc.

BBE and BBE symbol are trademarks of BBE Sound, Inc. and are licensed by BBE Sound, Inc. under U.S. Patent No. 4,638,258 and 4,482,866.

Design and specifications are subject to change without notice.

TABLE OF CONTENTS

WARNINGS AND CAUTIONS

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

WARNING!!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS, AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL FOR SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

ATTENTION

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION!!

AFIN D'EVITER TOUT RESQUE D'ELECTROCUTION PROVENANT D'UN CHÁSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÁSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS A LA SECURITE!!

LES COMPOSANTS IDENTIFIES PAR UNE TRAME ET PAR UNE MARQUE ⚠ SUR LES SCHEMAS DE PRINCIPE, LES VUES EXPLOSEES ET LES LISTES DE PIECES SONT D'UNEIMPORTANCE CRITIQUE POUR LA SECURITE DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMERO DE PIECE EST INDIQUE DANS LE PRESENT MANUEL OU DANS DES SUPPLEMENTS PUBLIES PAR SONY. LES REGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SECURITE DU FONCTIONNEMENT SONT IDENTIFIES DANS LE PRESENT MANUEL. SUIVRE CES PROCEDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONTIONNEMENT SUSPECTE.

SELF-DIAGNOSTIC FUNCTION

The units in this manual contain a self-diagnostic function. If an error occurs, the STANDBY/TIMER LED will automatically begin to flash. The number of times the LED flashes translates to a probable source of the problem. A definition of the STANDBY/TIMER LED flash indicators is listed in the instruction manual for the user’s knowledge and reference. If an error symptom cannot be reproduced, the Remote Commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

Diagnostic Test Indicators

When an error occurs, the STANDBY/TIMER LED will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the LED will identify the first of the problem areas.

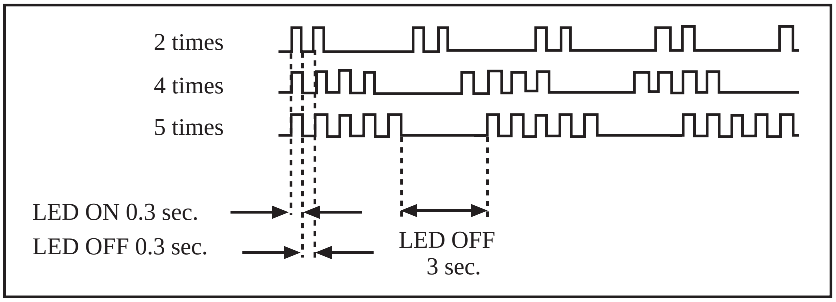
Results for all of the following diagnostic items are displayed on screen. No error has occurred if the screen displays a “0”.

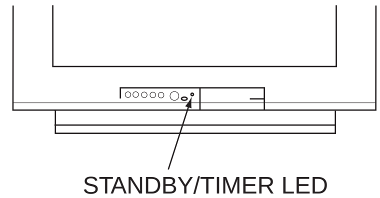
Diagnostic Item Description	No. of Times STANDBY/TIMER LED Flashes	Self-diagnostic Display/ Diagnostic Result	Probable Cause Location	Detected Symptoms
Power does not turn on	Does not light	——	• Power cord is not plugged in. • Fuse is burned out. (F600) (G Board)	• Power does not come on. • No power is supplied to the TV. • AC power supply is faulty.
+B overcurrent (OCP)*	2 times	2:0 or 2:1	• H.OUT (Q502) is shorted. (A Board) • IC1751 is shorted. (C Board)	• Power does not come on. • Load on power line is shorted.
Vertical deflection stopped*	4 times	4:0 or 4:1	• +13V is not supplied. (A Board) • IC541 is faulty. (A Board)	• Has entered standby state after horizontal raster. • Vertical deflection pulse is stopped. • Power line is shorted or power supply is stopped.
White balance failure (not balanced)	5 times	5:0 or 5:1	• Video OUT (IC541) is faulty. (A Board) • IC301 is faulty. (A Board) • Screen (G2) is improperly adjusted.**	• No raster is generated. • CRT cathode current detection reference pulse output is small.

* If a +B overcurrent is detected, stoppage of the vertical deflection is detected simultaneously. The symptom that is diagnosed first by the microcontroller is displayed on the screen.

** Refer to Screen (G2) Adjustments in Section 3-4 of this manual.

Display of Standby/Timer LED Flash Count





Diagnostic Item	Flash Count*
+B overcurrent	2 times
Vertical deflection stopped	4 times
White balance failure	5 times

*One flash count is not used for self-diagnostic.

Stopping the Standby/Timer LED Flash

Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY/TIMER LAMP from flashing.

Self-Diagnostic Screen Display

For errors with symptoms such as “power sometimes shuts off” or “screen sometimes goes out” that cannot be confirmed, it is possible to bring up past occurrences of failure on the screen for confirmation.

To Bring Up Screen Test

In standby mode, press buttons on the Remote Commander sequentially, in rapid succession, as shown below:

[Display] ➡ Channel [5] ➡ Sound volume [–] ➡ Power ON

Note that this differs from entering the service mode (sound volume [+]).

Self Diagnostic Screen Display

SELF DIAGNOSTIC

2:		0
3:	N/A	0
4:		0
5:		1
101:	N/A	0

Numeral “0” means that no fault was detected.

Numeral “1” means a fault was detected one time only.

Handling of Self-diagnostic Screen Display

Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen during repairs. When you have completed the repairs, clear the result display to “0”.

Unless the result display is cleared to “0”, the self-diagnostic function will not be able to detect subsequent faults after completion of the repairs.

Clearing the Result Display

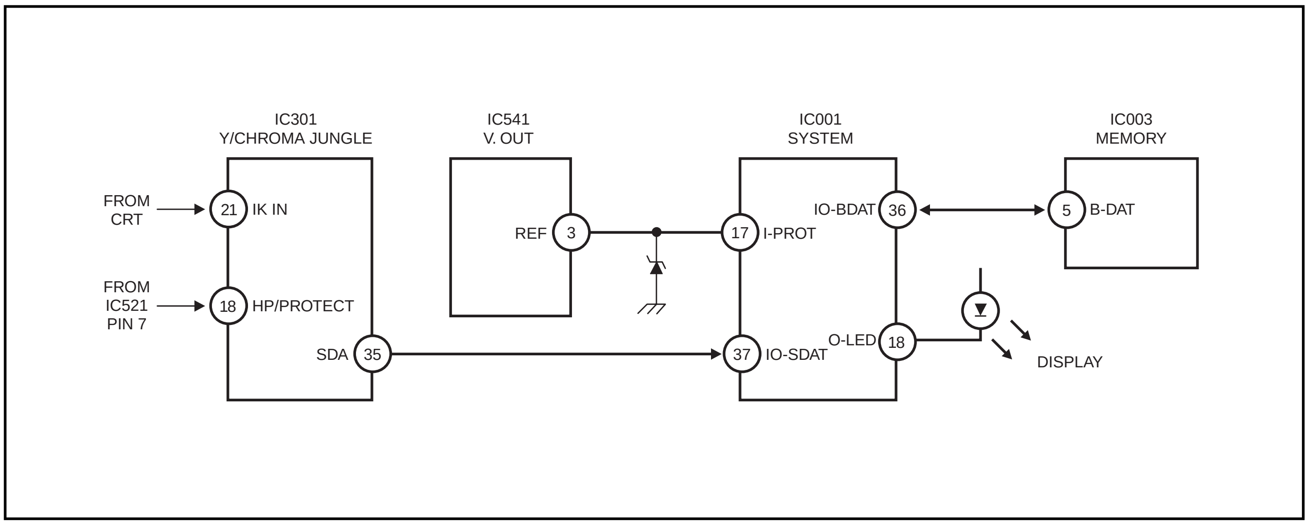
To clear the result display to “0”, press buttons on the Remote Commander sequentially when the diagnostic screen is displayed, as shown below:

Channel [8] ➡ [ENTER]

Quitting the Self-Diagnostic Screen

To quit the entire self-diagnostic screen, turn off the power switch on the Remote Commander or the main unit.

Self-diagnostic Circuit



+B overcurrent (OCP)	Occurs when an overcurrent on the +B (115V) line is detected by pin 18 of IC301. If the voltage of pin 18 of IC 301 is less than 1V when V.SYNC is more than seven verticals in a period, the unit will automatically turn off.
Vertical deflection stopped	Occurs when an absence of the vertical deflection pulse is detected by pin 17 of IC001. Power supply will shut down when waveform interval exceeds 2 seconds.
White balance failure	If the RGB levels* do not balance within 2 seconds after the power is turned on, this error will be detected by IC301. TV will stay on, but there will be no picture. *(Refers to the RGB levels of the AKB detection Ref pulse that detects 1K.)

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are “pinched” or touching high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the B+ and HV to see if they are specified values. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
8. Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

Leakage Test

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instructions.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75 V, so analog meters must have an accurate low voltage scale. The Simpson's 250 and Sanwa SH-63Trd are examples of passive VOMs that are suitable. Nearly all battery-operated digital multimeters that have a 2 VAC range are suitable (see Figure A).

How to Find a Good Earth Ground

A cold-water pipe is a guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60- to 100-watt trouble-light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side on the line; the lamp should light at normal brilliance if the screw is at ground potential (see Figure B).

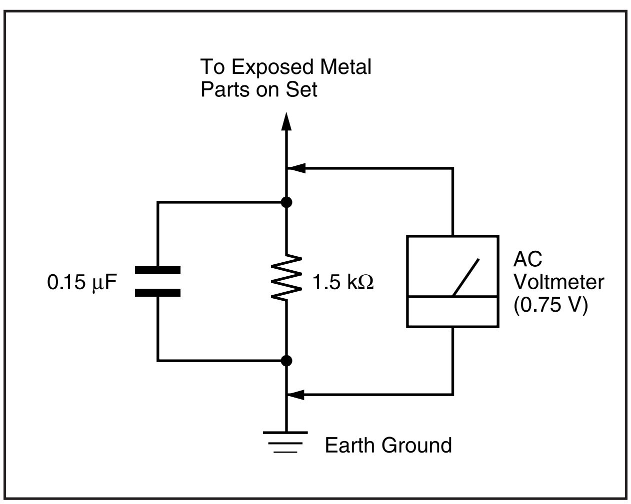


Figure A. Using an AC voltmeter to check AC leakage.

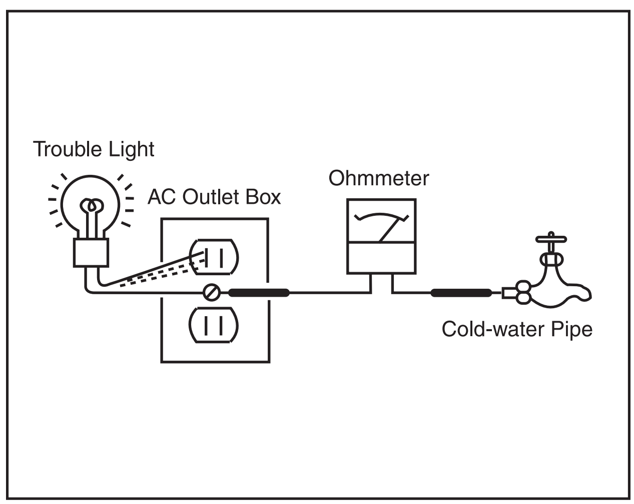


Figure B. Checking for earth ground.

The instructions mentioned here are partial abstracts from the Operating Instruction Manual.
The page numbers shown reflect those of the Operating Instruction Manual.

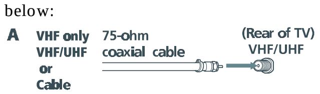
Connecting Your TV

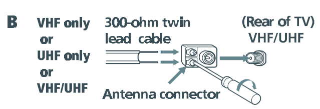
Read this chapter before setting up your TV for the first time. This section covers basic connections in addition to any optional equipment you may be connecting.

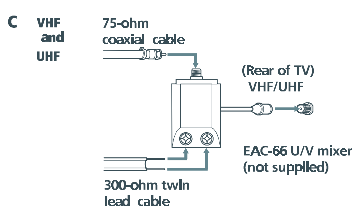
Basic Connections

TV with indoor or outdoor antenna, or CATV cable

Depending on the cable available in your home, choose one of the connections below:





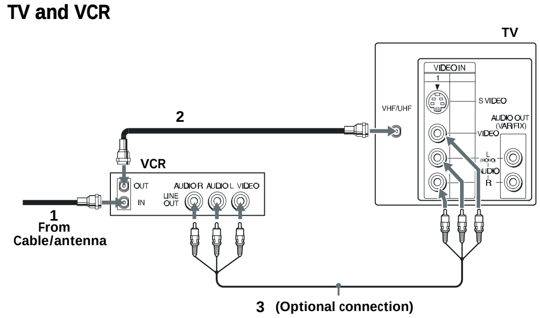


If you are connecting to an indoor or outdoor antenna, it will be necessary to adjust the orientation of the antenna for best reception.

User Guide

Connecting Additional Equipment

TV and VCR



1 Connect the coaxial cable from your TV antenna or cable TV to the IN jack on your VCR.

2 Connect a coaxial cable (not supplied) from the OUT jack on your VCR to the VHF / UHF IN jack on the TV.

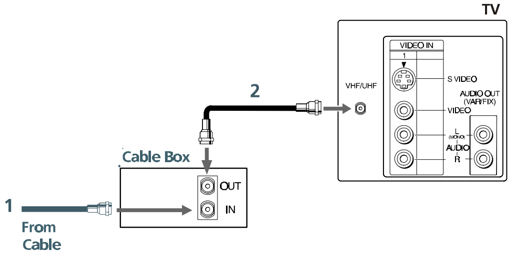
To watch video programs from your VCR, tune your TV to channel 3 or 4 (as set on the rear of your VCR).

(Optional connection)

3 If your VCR is equipped with video inputs, for better picture quality you should connect A / V cables from AUDIO and VIDEO OUT on your VCR to AUDIO / VIDEO IN on your TV. You can use the TV/VIDEO button to switch between the TV and VCR inputs.

For optimum picture quality, use S VIDEO instead of the yellow A/V cable.
S VIDEO does not provide sound, the audio cables must still be connected.

TV and Cable Box



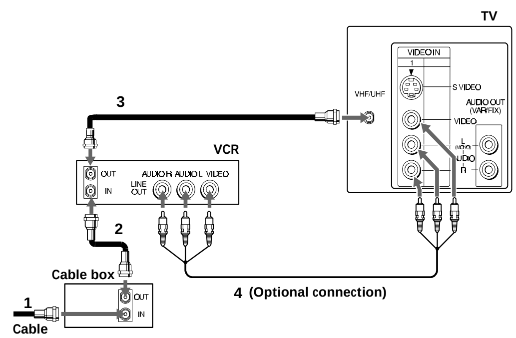
1 Connect the coaxial cable from the wall to the IN jack on your cable box.

2 Connect a coaxial cable (not supplied) from the OUT jack on your cable box to the VHF / UHF IN jack on the TV.

> To view channels from your cable box, tune your TV to channel 3 or 4 (as set on the rear panel of your cable box).

> If you will be controlling all channel selection through your cable box, you should consider using the CHANNEL FIX feature on page 20.

TV, VCR, and Cable box



1 Connect the coaxial cable from the wall to the IN jack on your cable box.

2 Connect a coaxial cable (not supplied) from the OUT jack on your cable box to the IN jack on your VCR.

3 Connect a coaxial cable (not supplied) from the OUT jack on your VCR to the VHF / UHF IN jack on the TV.

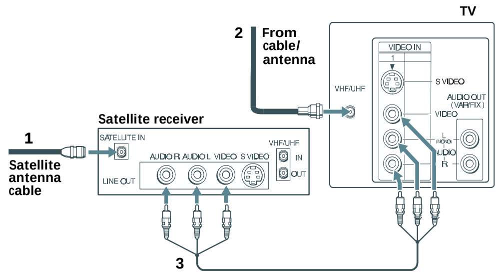
> If you will be controlling all channel selection through your cable box, you should consider using the CHANNEL FIX feature on page 20.

(Optional connection)

4 If your VCR is equipped with video inputs, for better picture quality you should connect A / V cables from AUDIO and VIDEO OUT on your VCR to AUDIO / VIDEO IN on your TV. You can use the TV/VIDEO button to switch between the TV and VCR inputs.

> For optimum picture quality, use S VIDEO instead of the yellow A/V cable. S VIDEO does not provide sound, the audio cables must still be connected.

TV and Digital Satellite Receiver



1 Connect the cable from your satellite antenna to SATELLITE IN on the satellite receiver.

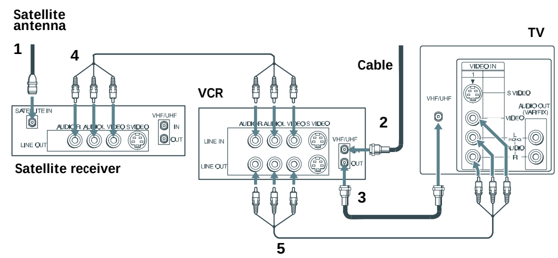
2 Attach the coaxial connector from your cable or antenna to VHF / UHF on your TV.

3 Using A / V connectors, connect AUDIO and VIDEO OUT on your satellite receiver to AUDIO and VIDEO IN on your TV.

> You can use the TV/VIDEO button to switch between the satellite receiver and TV.

> For optimum picture quality, use S VIDEO instead of the yellow A/V cable. S VIDEO does not provide sound, your audio connectors must still be connected.

TV, Digital Satellite Receiver and VCR



1 Connect the cable from your satellite antenna to SATELLITE IN on the satellite receiver.

2 Attach the coaxial connector from your cable or antenna to VHF / UHF IN on your VCR.

3 Using a coaxial cable, connect VHF / UHF OUT on your VCR to VHF / UHF on your TV.

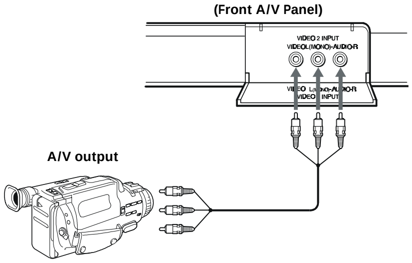
4 Using A / V connectors, connect AUDIO and VIDEO OUT on your satellite receiver to AUDIO and VIDEO IN on your VCR.

5 Using A / V connectors, connect AUDIO and VIDEO OUT on your VCR to AUDIO and VIDEO IN on your TV.

> To view from the satellite or VCR, select the video input to which your satellite receiver or VCR is connected by pressing TV/VIDEO on the remote control.

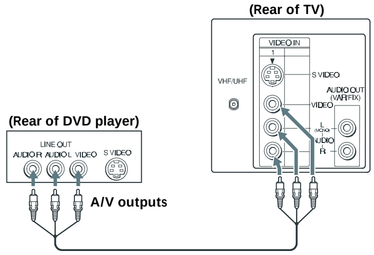
Connecting a Camcorder

Using A / V cables, connect AUDIO and VIDEO OUT on your camcorder to AUDIO and VIDEO IN on your TV.



Connecting a DVD Player

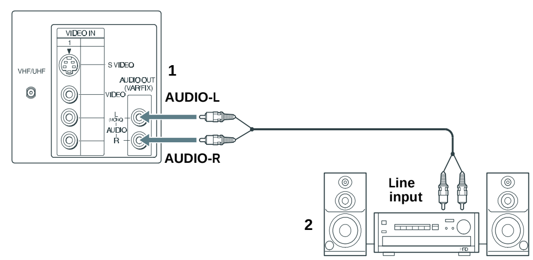
Using A / V connectors, connect LINE OUT on your DVD to VIDEO IN on your TV.



For optimum picture quality, use S VIDEO instead of the yellow A/V cable. S VIDEO does not provide sound, your audio connectors must still be connected.

Connecting an audio system

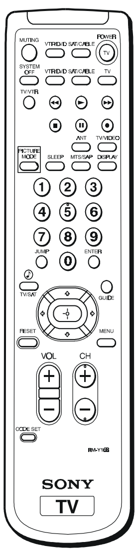
Using audio connectors, connect AUDIO OUT on your TV to one of the unused line inputs (e.g. TV, AUX, TAPE 2) on your stereo.

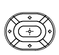


Set your stereo to the chosen line input. See page 16 for additional audio setup instructions.

Using the Remote Control and Basic Functions

This section shows you how to use more advanced buttons on the remote control and how to use the on-screen menus.



Button	Description
POWER	Press when you want to turn connected equipment on and off.
FUNCTION	Press when you want to control connected equipment with your remote control.
MUTING	Instantly turns off the sound. Press again or press VOL + to restore sound.
SYSTEM OFF	Powers off all Sony equipment at once.
TV/VIDEO	Cycles through available video inputs.
	Moves the cursor in the on-screen menus. Press the arrow buttons to move the cursor, press the center button to select or access an option.
PICTURE MODE	Cycles through the available VIDEO MODE settings.
SLEEP	Turns the TV off automatically in approximately 30, 60 or 90 minutes. Cancel by pressing until SLEEP OFF appears.
MTS/SAP	Cycles through the Multi-channel TV Sound (MTS) options: STEREO, SAP (Second Audio Programming), MONO.
DISPLAY	Press once to show current time, (if set) and channel number. Press again to activate CAPTION VISION settings, if available. To cancel, press again until DISPLAY OFF appears.

Button	Description
 TV/SAT	Cycles through available AUTO VOLUME settings (see page 16).
JUMP	Alternates back and forth between the last two channels selected with the 0-9 buttons.
GUIDE	Brings up the custom guide of your satellite receiver.
MENU	Displays the on-screen menu. Press again to exit the menu at any time.
RESET	Press to return to factory settings while in the on-screen menu.
CODE SET	Use to program your remote control to operate connected video equipment, (see page 29).

Troubleshooting

If you are having a problem with your TV, try the suggestions below. If the problem persists, contact your nearest Sony dealer.

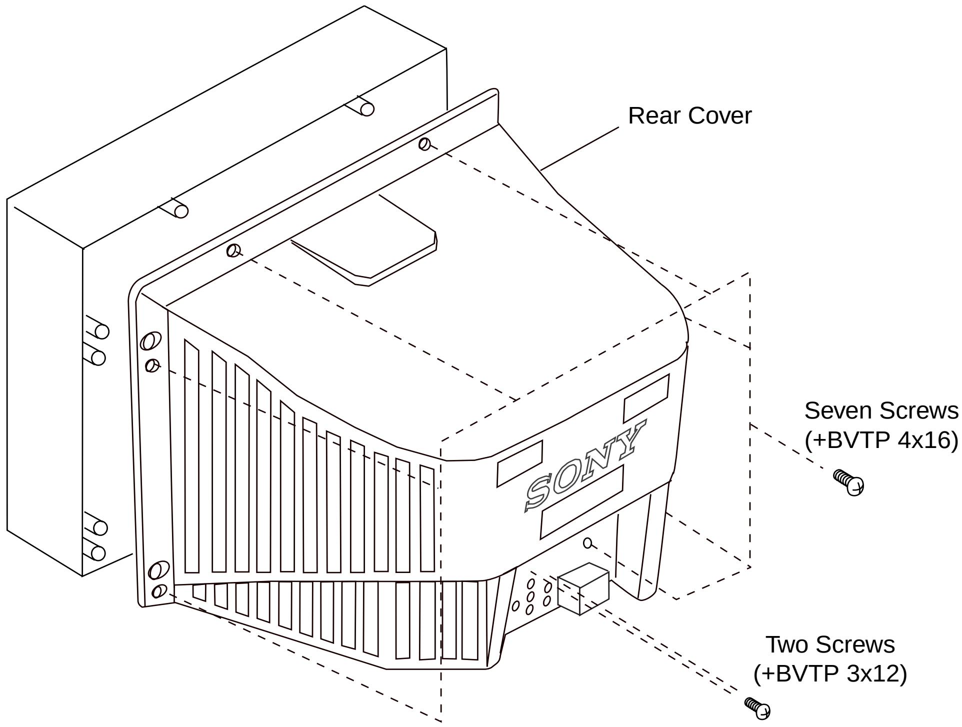
No picture, no sound	❑ Make sure the power cord is plugged in. ❑ If a red light is flashing on the front of your TV for more than a few minutes, call your local service center. ❑ Check your PARENTAL CONTROL settings, (pages 25-26). ❑ Check the TV / VIDEO settings: when watching TV, set to TV; when watching video equipment, set to VIDEO (page 15). ❑ Make sure the batteries have been inserted correctly into the remote control. ❑ Try another channel, it could be station trouble.
Poor or no picture, good sound	❑ Adjust PICTURE in the VIDEO menu (page 15). ❑ Adjust BRIGHTNESS in the VIDEO menu (page 15). ❑ Check the antenna and / or cable connections (page 3).
Good picture, no sound	❑ Press MUTING so that MUTING disappears from the screen (page 11). ❑ Check your AUDIO settings. Your TV may be set to SAP (page 16).
No color	❑ Adjust COLOR in the VIDEO menu (page 15).
Only snow appears on the screen	❑ Check the CABLE setting in the SET UP menu (page 20). ❑ Check the antenna and / or cable connections (page 3). ❑ Make sure the channel selected is currently broadcasting.
Dotted lines or stripes	❑ Adjust the antenna. ❑ Move the TV away from other electronic equipment. Some electronic equipment can create electrical noise, which can interfere with TV reception.
Double images or ghosts	❑ Check your outdoor antenna or call your cable service.
Cannot receive higher number channels (UHF) when using an antenna	❑ Make sure CABLE is set to OFF in the SET UP menu (page 20). ❑ Use AUTO PROGRAM to add channels that are not presently in the memory (page 20).

Cable stations don't seem to work	❑ Make sure CABLE is set to ON in the SET UP menu (page 20). ❑ Use AUTO PROGRAM to add channels that are not presently in the memory (page 20).
Remote Control does not operate	❑ Batteries could be weak. Replace them (page 2). ❑ Move the TV 3-4 feet away from fluorescent lights.
The TV needs to be cleaned	❑ Clean the TV with a soft dry cloth. Never use strong solvents such as thinner or benzine, which might damage the finish of the cabinet.
Lost password for PARENTAL CONTROL	❑ In the password screen, enter the following master password: 4357. After using the master password, you must create a new password.

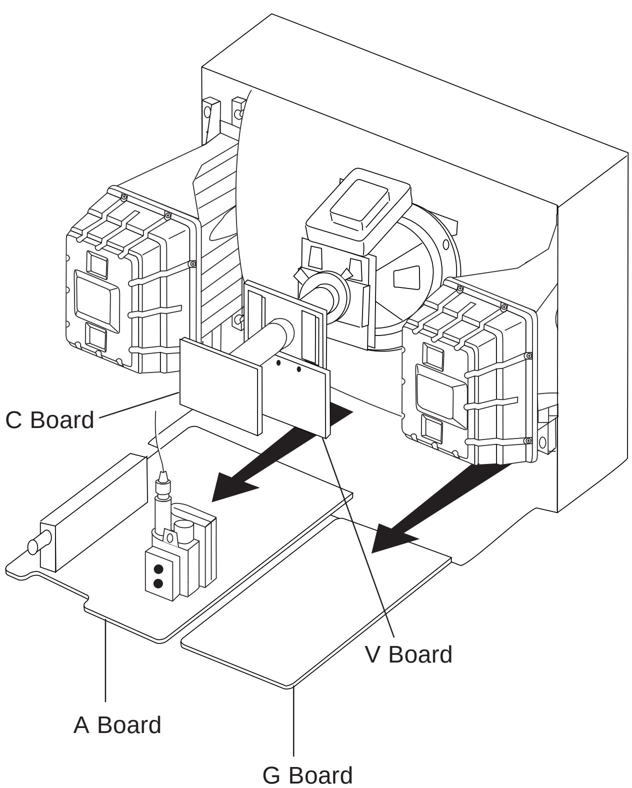
If, after reading these operating instructions, you have additional questions related to the use of your Sony television, please call our Direct Response Center at 1-800-222-SONY (7669) (U.S. residents only). (416) 499-SONY (7669) (Canadian residents only).

SECTION 2
DISASSEMBLY

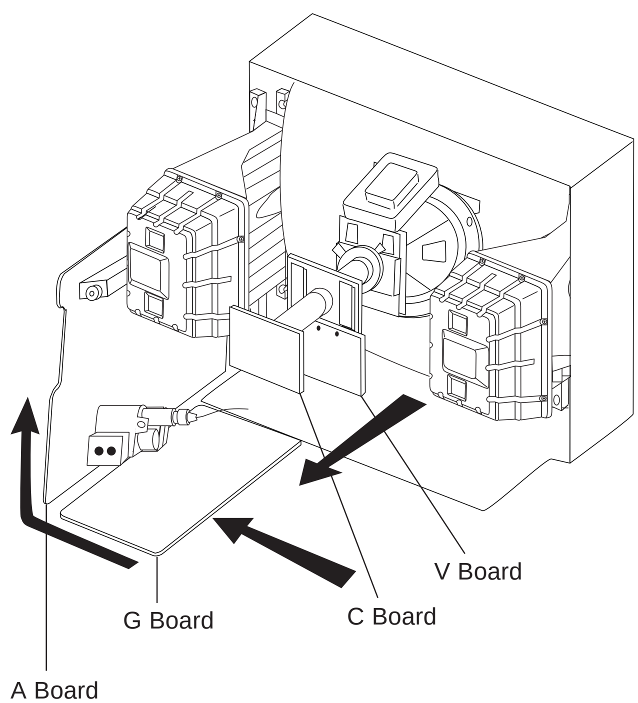
2-1. REAR COVER REMOVAL



2-2. A BOARD REMOVAL



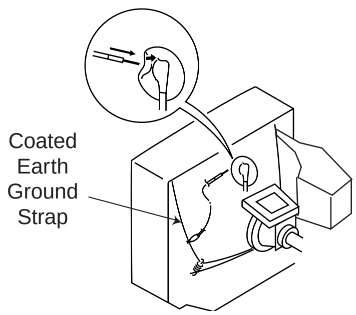
2-3. SERVICE POSITION

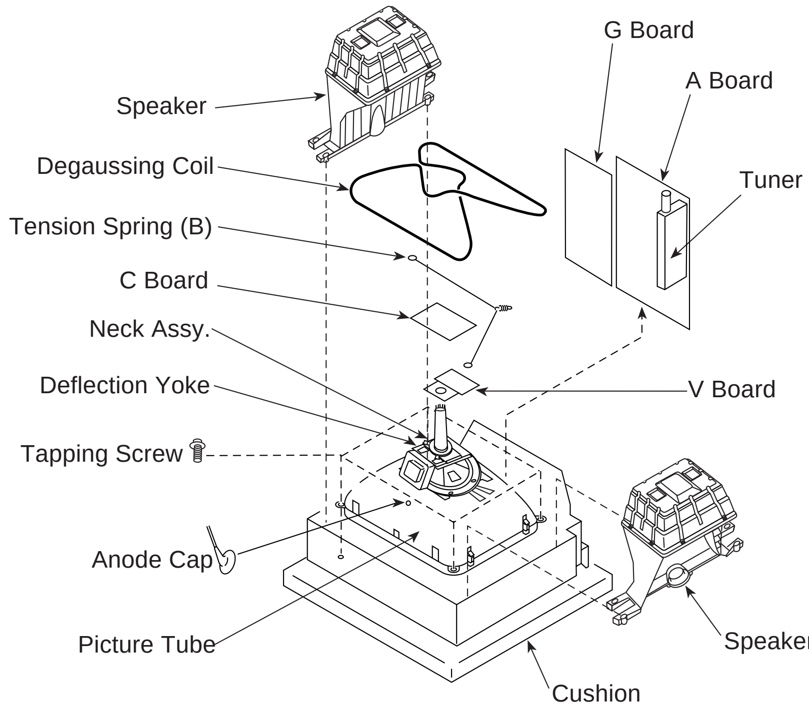


2-4. PICTURE TUBE REMOVAL

WARNING:
BEFORE REMOVING
THE ANODE CAP

High voltage remains in the CRT even after the power is disconnected. To avoid electric shock, discharge CRT ***before*** attempting to remove the anode cap. Short between anode and CRT coated earth ground strap.



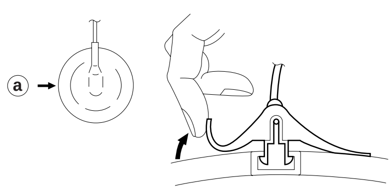


ANODE CAP REMOVAL

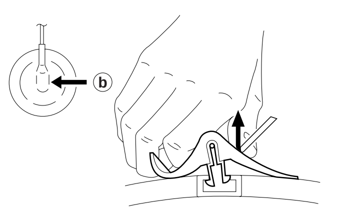
WARNING: High voltage remains in the CRT even after the power is disconnected. To avoid electrical shock, discharge the CRT **before** attempting to remove the anode cap. Short between anode and coated earth ground strap of CRT.

NOTE: After removing the anode, short circuit the anode of the picture tube and the anode cap to either the metal chassis, CRT shield, or carbon painted on the CRT.

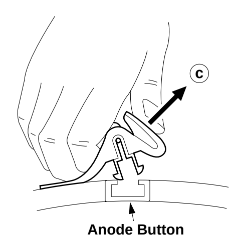
REMOVAL PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by arrow ⓐ.



② Use your thumb to pull the rubber cap firmly in the direction indicated by arrow ⓑ.



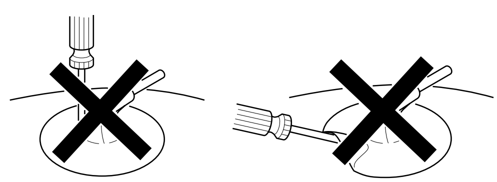
③ When one side of the rubber cap separates from the anode button, the anode cap can be removed by turning the rubber cap and pulling it in the direction of arrow ⓒ.

HOW TO HANDLE AN ANODE CAP

① Do not use sharp objects which may cause damage to the surface of the anode cap.

② To avoid damaging the anode cap, do not squeeze the rubber covering too hard. A material fitting called a shatter-hook terminal is built into the rubber.

③ Do not force turn the foot of the rubber cover. This may cause the shatter-hook terminal to protrude and damage the rubber.



SECTION 3
SET-UP ADJUSTMENTS

The following adjustments should be made when a complete realignment is required or when a new picture tube is installed.

These adjustments should be performed with rated power supply voltage unless otherwise noted.

Set the controls as follows unless otherwise noted.

VIDEO MODE: STANDARD
PICTURE control: .... Normal
BRIGHTNESS control......... Normal

Perform the adjustments in order as follows:
1. Beam Landing
2. Convergence
3. Focus
4. Screen (G2)
5. White Balance

Note: Test equipment required:
- Color bar pattern generator
- Degausser
- DC power supply
- Digital multimeter

3-1. BEAM LANDING

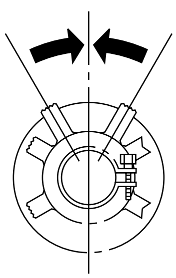
Before beginning adjustment procedure:

1. Degauss the entire screen.
2. Feed in the white pattern signal.

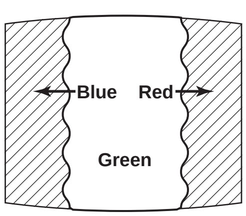
Adjustment Procedure

1. Input a raster signal with the pattern generator.
2. Loosen the deflection yoke mounting screw and set the purity control to the center as shown below.

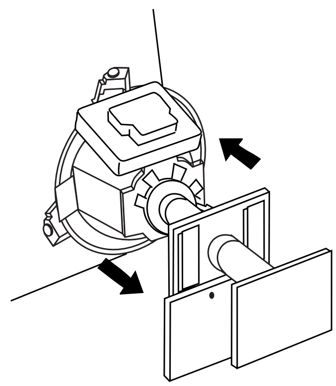
Purity Control



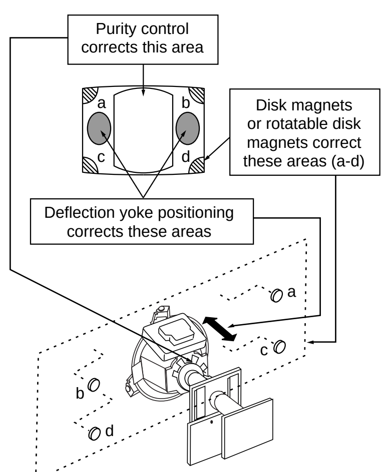
3. Turn the raster signal of the pattern generator to green.
4. Move the deflection yoke backward and adjust the purity control so that green is in the center and red and blue are at the sides evenly.



5. Move the deflection yoke forward and adjust so that the entire screen becomes green.



6. Switch over the raster signal to red and blue and confirm the condition.
7. When the position of the deflection yoke is determined, tighten it with the deflection yoke mounting screw.
8. If landing at the corner is not right, adjust by using the disk magnets.



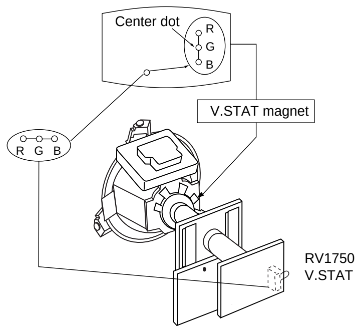
3-2. CONVERGENCE

Before starting convergence adjustments:

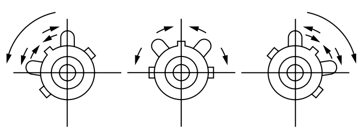
1. Perform FOCUS, V.LIN AND V.SIZE adjustments.
2. Set BRIGHTNESS control to minimum.
3. Feed in dot pattern.

Vertical Static Convergence

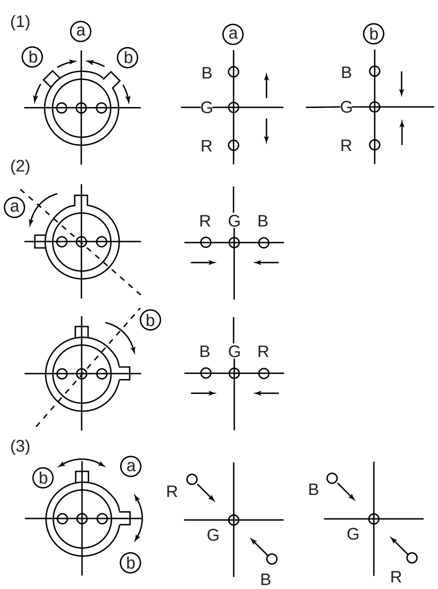
1. Adjust V.STAT magnet to converge red, green and blue dots in the center of the screen. (Vertical movement adjust V.STAT RV to converge.)



2. Tilt the V.STAT magnet and adjust static convergence to open or close the V.STAT magnet.



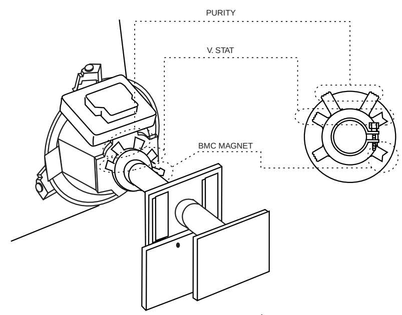
When the V.STAT magnet is moved in the direction of arrows a and b, red, green, and blue dots move as shown below:

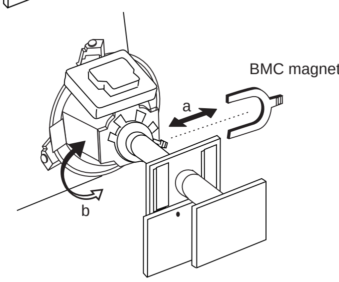


Horizontal Static Convergence

If the blue dot does not converge with the red and green dots, perform the following:

1. Move BMC magnet (a) to correct insufficient H. Static convergence.
2. Rotate BMC magnet (b) to correct insufficient V. Static convergence.
3. After adjusting the BMC magnet, repeat Beam Landing Adjustment.

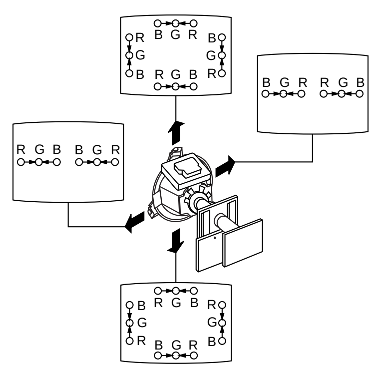




Dynamic Convergence Adjustment

Before performing this adjustment, perform Horizontal and Vertical Static Convergence Adjustment.

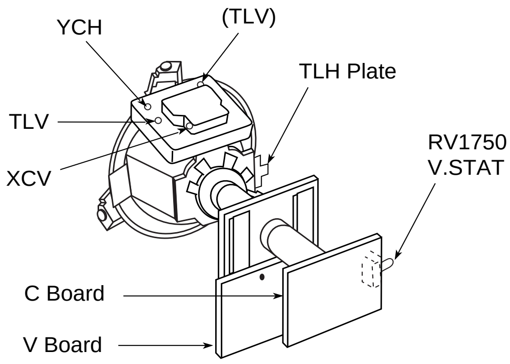
1. Slightly loosen deflection yoke screw.
2. Remove deflection yoke spacers.
3. Move the deflection yoke for best convergence, as shown below:

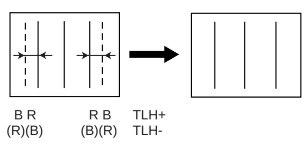


4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.

TLH Plate Adjustment

- Input crosshatch pattern
- Adjust PICTURE QUALITY to standard, PICTURE and BRIGHTNESS to 50%, and OTHER to standard.
- Adjust the Horizontal Convergence of red and blue dots by tilting the TLH plate on the deflection yoke.



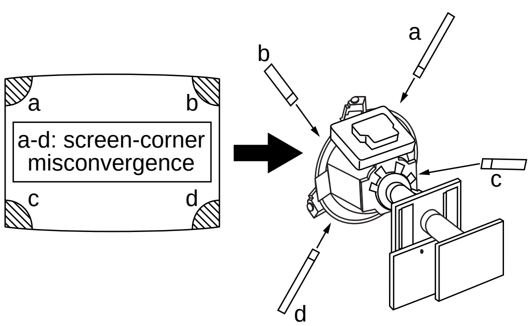


1. Adjust XCV core to balance X axis.
2. Adjust YCH VR to balance Y axis.
3. Adjust vertical red and blue convergence with V.TILT (TLV VR.)

Perform adjustments while tracking items 1 and 2.

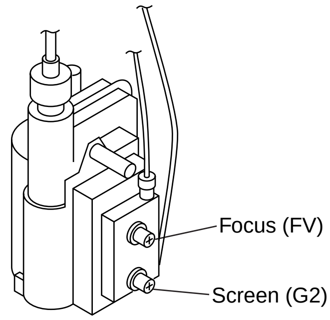
Screen-Corner Convergence

1. Affix a permalloy assembly corresponding to the misconverged areas.



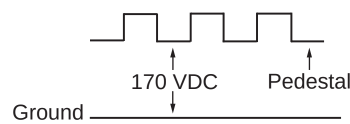
3-3. FOCUS

1. Adjust FOCUS control for best picture.



3-4. SCREEN (G2)

1. Input a dots pattern.
2. Set the PICTURE and BRIGHTNESS controls at minimum and COLOR control at normal.
3. Adjust SBRT, GCUT, BCUT in service mode with an oscilloscope as shown below so that voltages on the red, green, and blue cathodes are 170 VDC.



4. Observe the screen and adjust SCREEN (G2) VR in FBT to obtain the faintly visible background of dot signal.

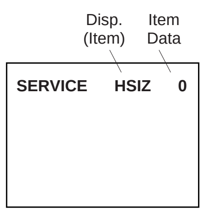
3-5. METHOD OF SETTING THE SERVICE ADJUSTMENT MODE

Service Mode Procedure

1. Standby mode (power off).
2. Display → Channel 5 → Sound volume + → Power on the Remote Commander (press each button within a second).

Service Adjustment Mode In

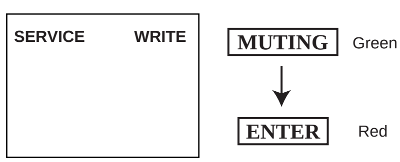
1. The CRT displays the item being adjusted.



2. Press 1 or 4 on the Remote Commander to select the item.
3. Press 3 or 6 on the Remote Commander to change the data.
4. Press MUTING then ENTER to save into the memory.

Service Adjustment Mode Memory

Turn set off then on to exit service adjustment mode.



3-6. WHITE BALANCE ADJUSTMENTS

1. Input an entire white signal with burst.
2. Set to Service Adjustment Mode.
3. Set DCOL to “0”.
4. Set the PICTURE and BRIGHTNESS to minimum.
5. Adjust with SBRT if necessary.
6. Select GCUT and BCUT with 1 and 4 .
7. Adjust with 3 and 6 for the best white balance.
8. Set PICTURE and BRIGHTNESS to maximum.
9. Select GDRV and BDRV with 1 and 4 .
10. Adjust with 3 and 6 for the best white balance.
11. Reset DCOL to “1”.
12. To write into memory, press MUTING then ENTER .

SECTION 4
SAFETY RELATED ADJUSTMENTS

4-1. R582 AND R584 CONFIRMATION METHOD (HV HOLD-DOWN CONFIRMATION) AND READJUSTMENTS

The following adjustments should always be performed when replacing the following components which are marked with on the schematic diagram:

A BOARD:	DY, CRT, C507, C520, C573, C574, C575, D572, D573, D574, IC521, IC301, R578, R579, R582, R583, R584, R585, R586, R587, T504, T505

Preparation Before Confirmation

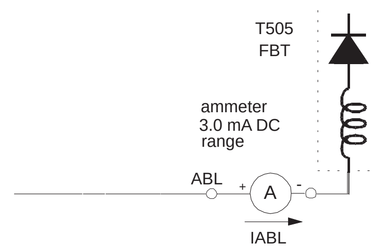
1. Using a Variac, apply AC input voltage: 120 ± 2 VAC (or 120-220 ± 2 VAC for KV-25FV10/10C only.)
2. Turn the POWER switch ON.
3. Input a white signal and set the PICTURE and BRIGHTNESS controls to maximum.
4. Confirm that the voltage between C574 (+) or TP503 and ground is more than 105 VDC.

Hold-down Operation Confirmation

1. Connect the current meter between Pin 11 of the FBT (T505) and the PWB land where Pin 11 would normally attach. (See Figure 1 on the next page.)
2. Input a dot signal and set PICTURE and BRIGHTNESS to minimum: IABL = 100 ± 100 µA.
3. Confirm the voltage of A Board TP-600 is 135 ± 3 VDC.
4. Connect the digital voltmeter and the DC power supply via diode 1SS119 to C574 (+) and ground. (See Figure 1 on the next page.)
5. Increase the DC power voltage gradually until the picture blanks out.
6. Turn DC power source off immediately.
7. Read the digital voltmeter indication (standard: 138.0 ± .3 VDC).
8. Input a white signal and set PICTURE and BRIGHTNESS to maximum: IABL = 1650 ± 100 µA.
9. Repeat steps 4 to 7.

Hold-down Readjustment

If the setting indicated in step 2 of Hold-down Operation Confirmation cannot be met, readjustment should be performed by altering the resistance value of R582 and/or R584 components marked with .



4-2. B+ VOLTAGE CONFIRMATION AND ADJUSTMENT

Note: The following adjustments should always be performed when replacing the following components, which are marked with on the schematic diagram on the G Board.

G BOARD:	IC601, PH600

1. Using a Variac, apply AC input voltage: 130 ± 2 VAC (or 120-220 ± 2 VAC for KV-25FV10/10C only.)
2. Input a dot signal.
3. Set the PICTURE and BRIGHTNESS controls to minimum.
4. Confirm that the voltage of A Board TP-600 is 135 ± 3 VAC.
5. If step 3 is not satisfied, replace the components listed above, then repeat steps 1–3.

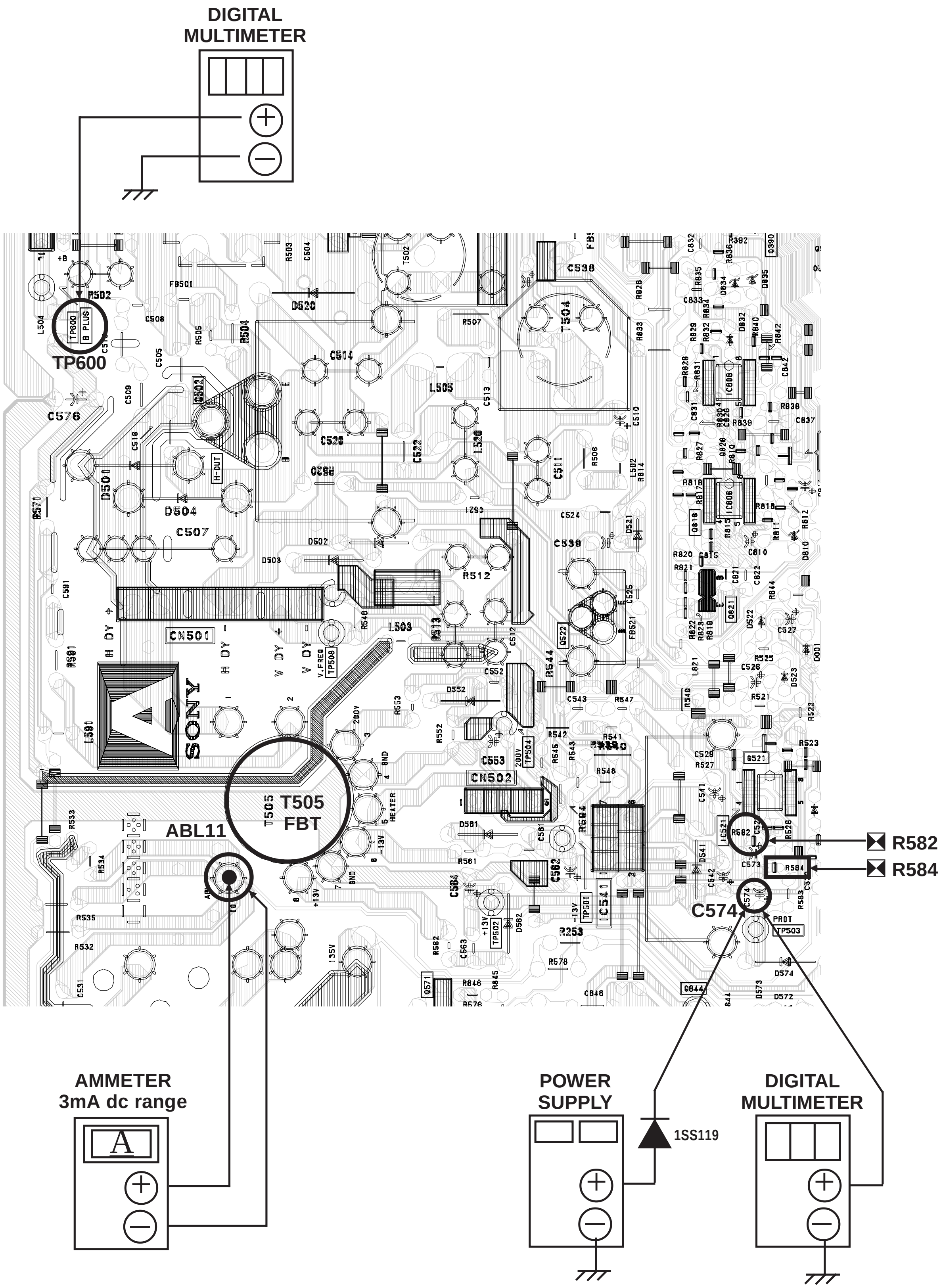

DIGITAL
MULTIMETER
TP600
ABL11
T505
FBT
R582
R584
C574
AMMETER
3mA dc range
A
POWER
SUPPLY
1SS119
DIGITAL
MULTIMETER

Figure 1

SECTION 5
CIRCUIT ADJUSTMENTS

ELECTRICAL ADJUSTMENTS BY REMOTE COMMANDER

Use the Remote Commander (RM-Y168) to perform the circuit adjustments in this section.

NOTE: Test Equipment Required:

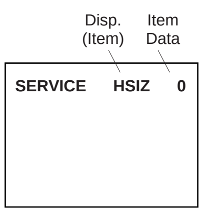
- Pattern generator
- Frequency counter
- Digital multimeter
- Audio oscillator

5-1. Setting the Service Adjustment Mode

1. Standby mode (power off).
2. [Display] ➡ Channel [5] ➡ Sound volume [+] ➡ Power on the Remote Commander (press each button within a second).

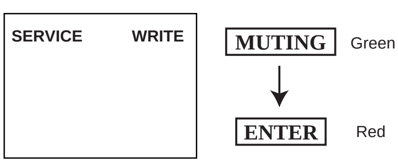
Service Adjustment Mode On

1. The CRT displays the item being adjusted.

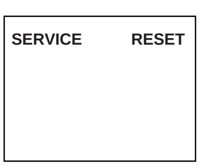


2. Press [1] or [4] on the Remote Commander to select an item.
3. Press [3] or [6] on the Remote Commander to change the data.
4. Press [MUTING] then [ENTER] to save into the memory.

Service Adjustment Mode Memory



1. Press [8] then [ENTER] on the Remote Commander to initialize.



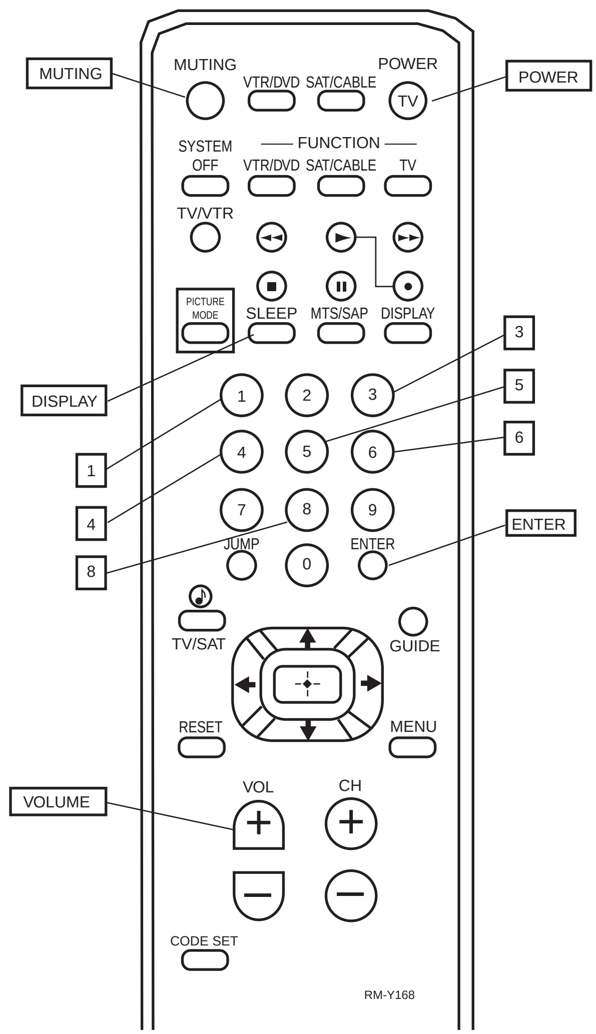
Carry out step 1 when adjusting IDs 0–4 and when replacing and adjusting IC003.

2. Turn set off then on to exit service adjustment mode.

5-2. Memory Write Confirmation Method

1. After adjustment, remove the power plug from the AC outlet, then plug it in again.
2. Turn the power switch ON and set to service mode.
3. Call the adjusted items again to confirm they were adjusted.

5-3. Adjustment Buttons and Indicators



Adjustment Items

NO.	ITEM	FUNCTION	DATA RANGE	INITIAL DATA			AVERAGE DATA
				NTSC	PALM/ PALN	VIDEO	
1	HSIZ	HORIZONTAL SIZE ADJ.	0-63	35	35		38
2	HPOS	HORIZONTAL POS. ADJ.	0-63	33	33		21
3	VBOW	VRT LINE BOWING ADJ.	0-15	5	5		9
4	VANG	VRT LINE BOW SLANT ADJ.	0-15	7	7		5
5	TRAP	HORIZ. TRAPEZOID ADJ.	0-15	7	7		7
6	PAMP	HORIZ. PIN DISTORTION ADJ.	0-63	7	7		32
7	UPIN	UPPER PIN DISTORTION ADJ.	0-63	36	36		39
8	LPIN	LOWER PIN DISTORTION ADJ.	0-63	36	36		39
9	BLK0	VERTICAL BLANKING ON/OFF	0, 1	0			0
10	VMLV	VELOCITY MODULATION LEVEL	0-3	Palette mode controls this register			2
11	AGN2	AGING 2	0, 1	0			0
12	REFP	REFERENCE PULSE POSITION	0, 1	0			0
13	VBLK	VERTICAL BLANKING ON/OFF	0, 1	0			0
14	JPSW		0, 1	0			0
15	VSIZ	VERTICAL SIZE ADJ.	0-63	47	47		49
16	VPOS	VERTICAL POSITION ADJ.	0-63	32	32		32
17	VLIN	VERTICAL LINEARITY ADJ.	0-15	6			6
18	SCOR	VERTICAL “S” CORRECTION ADJ.	0-15	8			8
19	VZOM	16:9 CRT Z MODE ON/OFF	0, 1	0			0
20	EHT	VRT HI-VOLT. CORRECTION	0-15	6			6
21	ASP	ASPECT RATIO CONTROL	0-63	47			47
22	SCRL	16:9 CRT Z MODE TRANS SCROLL	0-63	31			31
23	HBLK	HORIZONTAL BLANKING ON/OFF	0, 1	1			1
24	LBLK	LEFT BLANKING ADJ.	0-15	12			12
25	RBLK	RIGHT BLANKING ADJ.	0-15	5			5
26	VUSN	V SAW WAVEFORM COMPRESS	0, 1	0			0
27	HDW	H. DRIVE PULSE WIDTH	0, 1	1			1
28	EWDC	“PARABOLA” EW/DC ADJ.	0, 1	0			0
29	LVLN	LOWER SCREEN BTM VRT LIN ADJ.	0-15	0			0
30	UVLN	UPPER SCREEN BTM VRT LIN ADJ.	0-15	0			0
31	RDRV	R OUTPUT DRIVE CONTROL	0-63	31			36
32	GDRV	G OUTPUT DRIVE CONTROL	0-63	25			26
33	BDRV	B OUTPUT DRIVE CONTROL	0-63	25			25
34	RCUT	R OUTPUT CUTOFF CONTROL	0-15	10			8
35	GCUT	G OUTPUT CUTOFF CONTROL	0-15	7			6
36	BCUT	B OUTPUT CUTOFF CONTROL	0-15	6			7
37	DCOL	DYNAMIC COLOR ON/OFF	0, 1	0			1
38	SHUE	SUB HUE	0-31	14			15
39	SCOL	SUB COLOR	0-31	14	14		15
40	SBRT	SUB BRIGHTNESS	0-31	15			15
41	RON	R OUTPUT ON/OFF	0, 1	1			1
42	GON	G OUTPUT ON/OFF	0, 1	1			1
43	BON	B OUTPUT ON/OFF	0, 1	1			1
44	AXPL	AXIS PAL	0, 1	0			0
45	AXNT	AXIS NTSC	0, 1	0			0
46	CBPF	CHROMA BPF ON/OFF	0, 1	0			1
47	CTRP	Y TRAP FILTER ON/OFF	0, 1	1			1
48	COFF	COLOR ON/OFF	0, 1	0			0
49	KOFF	SET COLOR KILLER	0, 1	0			0
50	SSHP	SUB SHARPNESS	0-15	6			7
51	SHPF	SHARPNESS CIRCUIT F0	0, 1	1			1
52	PREL	PRE/OVR SHOOT SWITCHING	0, 1	1		1	1
53	Y-DC	DC TRANS RATIO SWITCHING	0, 1	1			1
54	GAMM	GAMMA CORRECTION AMNT	0-3	Palette mode controls this register			1
55	ABLM	ABL MODE SWITCHING	0, 1	1			1
56	VTH	ABL CD VHT SWITCHING	0, 1	1			1
57	YDEL	Y DELAY TIME CONTROL	0-15	7			7
58	NCOL	NO COLOR ID	0, 1	1			1
59	FSC	FSC OUT ON/OFF	0, 1	1			1
60	K-ID	KILLER ID CONTROL SW	0, 1	0			0
61	HOSC	H VCO OSCILLATION FREQ	0-15	7			7
62	VSS	V SYNC SLICE LEVEL	0, 1	1			0

NO.	ITEM	FUNCTION	DATA RANGE	INITIAL DATA NTSC	PALM/ PALN	VIDEO	AVERAGE DATA
63	HSS	H SYNC SLICE LEVEL	0, 1	0			0
64	HMSK		0, 1	0			0
65	VTMS	SELECT SIGNAL VTIM PIN	0-3	0			0
66	CDMD	V CNT DWN MODE SWITCHING	0-3	0		3	0
67	AFC	AFC LOOP GAIN SWITCHING	0-3	0		0	0
68	FIFR	FIELD FREQUENCY	0-3	3	1		3
69	SBAL	SUB BALANCE	0-15	7			7
70	SBAS	SUB BASS	0-15	9			9
71	STRE	SUB TREBLE	0-15	9			9
72	BBEL	BBE LOW	0-15	12			12
73	BBEH	BBE HIGH	0-15	9			9
74	SRND	SURROUND	0-63	13			13
75	BBE	BBE ON/OFF	0, 1	1			1
76	DISP	O.S.D DISPLAY POSITION	0-63	22			15
77	TROT	TILT CORRECTION	0-63	31			31
78	HCLW	HORIZONTAL COUNT LOWER LIMIT	0-127	16		16	16
79	HCHG	HORIZONTAL COUNT HIGH LIMIT	0-127	64		64	64
80	ABL0		0, 1	0			1
81	ABL1		0-7	0			7
82	SYSC	COLOR SYSTEM	0-7	6			6
83	VENH	VERTICAL ENHANCEMENT	0-7	Palette mode controls this register			4
84	CBPC		0, 1	0			0
85	BYCF		0, 1	0			0
86	KILC		0, 1	0			0
87	LDOT		0, 1	0			0
88	CORE		0, 1	0			0
89	ID0		0-255	201			See ID Map
90	ID1		0-255	19			See ID Map
91	ID2		0-255	173			See ID Map
92	ID3		0-255	43			See ID Map
93	ID4		0-255	251			See ID Map
94	ID5		0-255	0			See ID Map
95	ID6		0-255	64			See ID Map

Notes:

No. 1–95 show the order that each adjustment mode may be selected while in service mode.

Data Range shows the range of possible settings for each adjustment mode.

Initial Data shows the standard settings for each adjustment mode.

SERVICE ID0 25

Feature ID Map

MODEL	DEST.	ID-0	ID-1	ID-2	ID-3	ID-4	ID-5	ID-6
KV-24FV10	US	217	19	173	11	219	0	64
KV-24FV10	CND	217	19	173	43	219	0	64
KV-25FV10	E	145	19	173	83	251	0	64
KV-25FV10C	E	145	19	173	83	251	0	64

5-4. A BOARD ADJUSTMENTS

H. Frequency (Free Run) Check

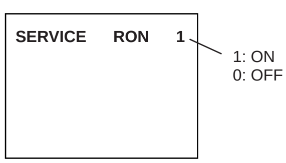
1. Input a TV mode (RF) with no signal.
2. Connect a frequency counter to base of Q501 (TP-500 H. DRIVE).
3. Check H. Frequency for 15735 ± 200 Hz.

V. Frequency (Free Run) Check

1. Select video 1 with no signal input.
2. Set the conditions for a standard setting.
3. Connect the frequency counter on the A board to TP-508 (V OUT) or CN 501 pin ⑥ (V DY+) and ground.
4. Check that V. Frequency shows 60 ± 4 Hz.

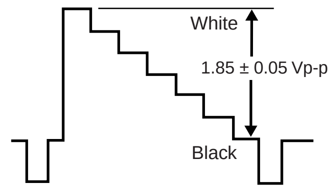
Sub Contrast Adjustment (RDRV)

1. Input a color-bar signal and set the level to 75%.
2. In Standard mode, set PICTURE to maximum, COLOR to minimum, and BRIGHTNESS to center.
3. Activate the Service Adjustment Mode.
4. Set both GON and BON items. Using [3] and [6]; set each to the following values. Leave RON set to 1.



R ON:	ON	(1)
G ON:	OFF	(0)
B ON:	OFF	(0)

5. Select the item DCOL item and set it to 0.
6. Connect an oscilloscope probe to C board, CN1752 pin ③ TP47R (RED OUT).
7. Select RDRV with [1] and [4] .
8. Adjust the value of RDRV with [3] and [6] for 1.85 ± 0.05 Vp-p.



9. Reset the item DCOL to 1.
10. Reset GON and BON values to 1.

R ON:	ON	(1)
G ON:	ON	(1)
B ON:	ON	(1)

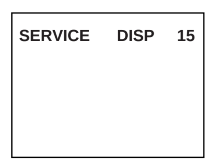
11. Reset Picture, Color, and Bright to normal values:

PICTURE:	MAX
COLOR:	CENTER
BRIGHT:	CENTER

12. Press [MUTING] then [ENTER] to save into the memory.

Display Position Adjustment (DISP)

1. Input a color-bar signal.
2. Set to Service Adjustment Mode.
3. Select DISP with [1] and [4] .
4. Adjust values of DISP with [3] and [6] to adjust characters to the center.
5. Write to memory by pressing [MUTING] then [ENTER] .
6. Check to see if the text is displayed on the screen.

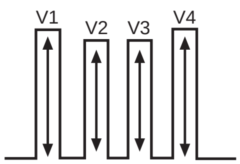


Sub Bright Adjustment (SBRT)

1. Input a monoscope signal.
2. Activate the Service Adjustment Mode.
3. Set the PICTURE and BRIGHTNESS to minimum.
4. Select the SBRT item with [1] and [4] .
5. Adjust the values of SBRT with [3] and [6] to obtain a faintly visible crosshatch.
6. Press [MUTING] then [ENTER] to save into the memory.

Sub Hue, Sub Color Adjustment (SHUE, SCOL)

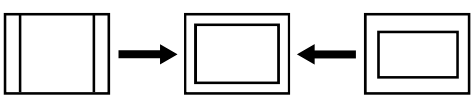
1. Input a color-bar signal.
2. Activate the Service Adjustment Mode.
3. Select the DCOL item and set the value to 0.
4. Connect an oscilloscope probe to C Board, CN1752 Pin ⑤ or TP47b (BLUE OUT).
5. Select the SHUE and SCOL item with 1 and 4 .
6. While showing the SHUE item, adjust the waveform with 3 and 6 until the second and third bars show the same level (V2 = V3 ± 0.15 Vp-p).
7. While showing the SCOL item, adjust the waveform with 3 and 6 until the first and fourth bars show the same level (V1 = V4 ± 0.15 Vp-p).



8. Select the DCOL item and reset to 1.
9. Press MUTING then ENTER to save into the memory.

V. Size Adjustment (VSIZ)

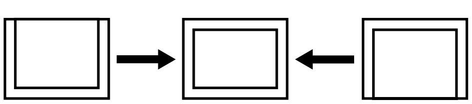
1. Input a crosshatch signal.
2. Activate the Service Adjustment Mode.
3. Select the VSIZ item with 1 and 4 .
4. Adjust value of VPOS with 3 and 6 for the best vertical center.
5. Press MUTING then ENTER to save into the memory.



V. Center Adjustment (VPOS)

Perform this adjustment after performing H. Frequency (Free Run) check.

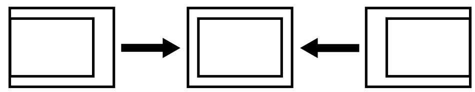
1. Input a crosshatch signal.
2. Activate the Service Adjustment Mode.
3. Select the VPOS item with 1 and 4 .
4. Adjust value of VPOS with 3 and 6 for the best vertical center.
5. Press MUTING then ENTER to save into the memory.



H. Center Adjustment (HPOS)

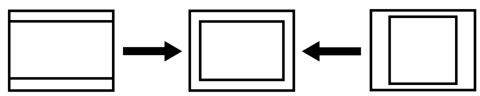
Perform this adjustment after performing H. Frequency (Free Run) check.

1. Input a crosshatch signal.
2. Activate the Service Adjustment Mode.
3. Select the HPOS item with 1 and 4 .
4. Adjust the value of HPOS with 3 and 6 for the best horizontal center.
5. Press MUTING then ENTER to save into the memory.



H.Size Adjustment (HSIZ)

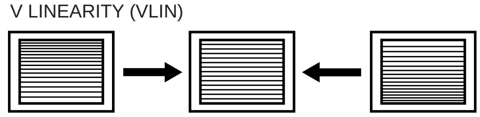
1. Input a monoscope signal.
2. Activate the Service Adjustment Mode.
3. Select HSIZ with 1 and 4 .
4. Adjust with 3 and 6 for the best Horizontal size.
5. Press MUTING then ENTER to save into the memory.



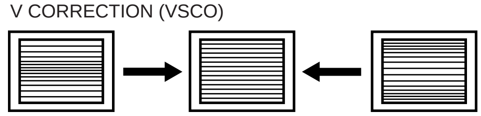
V. Linearity (VLIN), V Correction (VSCO), Pin Amp (PAMP) and Horizontal Trapezoid (TRAP) Adjustments

1. Input a crosshatch signal.
2. Activate the Service Adjustment Mode.
3. Select VLIN, VSCO, PAMP, and PPHA with with 1 and 4.
4. Adjust with 3 and 6 for the best Horizontal size.
5. Press MUTING then ENTER to save into the memory.

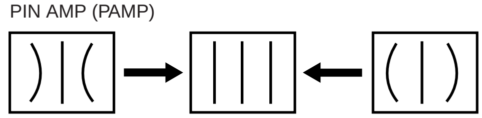
V LINEARITY (VLIN)



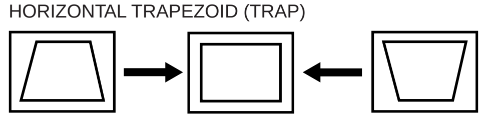
V CORRECTION (VSCO)



PIN AMP (PAMP)

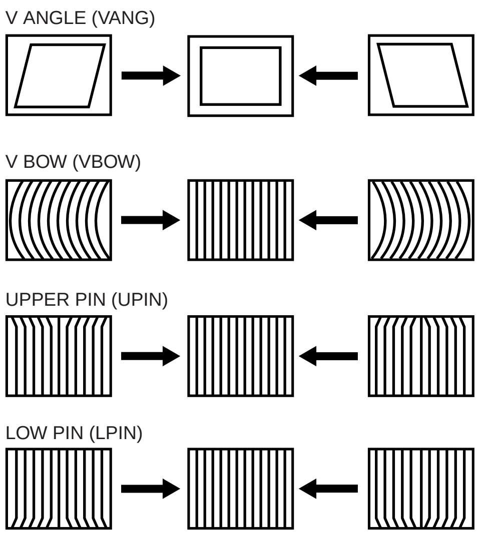


HORIZONTAL TRAPEZOID (TRAP)



V Angle (VANG), V Bow (VBOW), Upper pin (UPIN) and Low Pin (LPIN) Adjustments

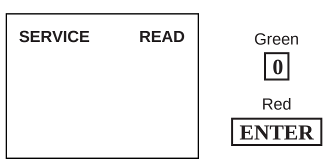
1. Input a crosshatch signal.
2. Activate the Service Adjustment Mode.
3. Select VANG, VBOW, UPIN, and LPIN with [1] and [4].
4. Adjust with [3] and [6] for the best picture.
5. Press [MUTING] then [ENTER] to save into the memory.



Service Adjustment Mode Memory

1. Change the value of the DCOL item to 1.
2. After completing all adjustments, press [0] then [ENTER] .

Read From Memory



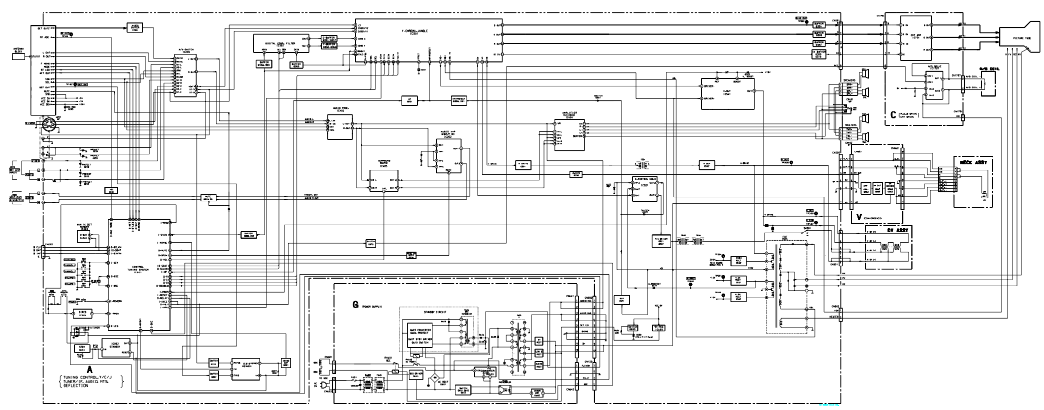
NOTES:

NOTES:

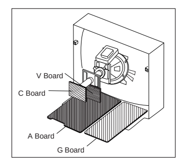
NOTES:

SECTION 6
DIAGRAMS

6.1 BLOCK DIAGRAM



6.2 CIRCUIT BOARD LOCATIONS



6-3. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytic and tantalums.
- All electrolytics are 50V unless otherwise specified.
- Indication of resistance, which does not have one for rating electrical power, is as follows:
  Pitch: 5mm
  Rating electrical power 1/4W (CHIP: 1/10W)
- All resistors are in ohms.
  KΩ = 1000Ω MΩ = 1000KΩ
- : nonflammable resistor
- : fusible resistor
- △ : internal component
- ▭ : panel designation and adjustment for repair
- ⊥ : earth-ground
- : earth-chassis
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪, make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by ⧓ and repeat the adjustment until the specified value is achieved (refer to Safety Related Adjustments on page 20).

- When replacing parts shown in the table below, be sure to perform the related adjustments.

Part Replaced (◪)	Adjustment (⧓)
DY, CRT, C507, C520, C573, C574, C575, D572, D573, D574, IC521, IC301, R578, R579, R582, R583, R584, R585, R586, R587, T504, T505..................................A Board	HV HOLD-DOWN (R582, R584)
IC601, PH600...................G Board	B+ VOLTAGE CONFIRMATION

- All voltages are in Volts
- Voltage is DC with respect to ground unless otherwise noted.
- Readings are taken with a 10MΩ digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerance.
- Circled numbers are waveform references.
- * : cannot be measured
- ▬▬ : B + Line
- - - - - : B – Line
- ⇨ : Signal path

Reference Information

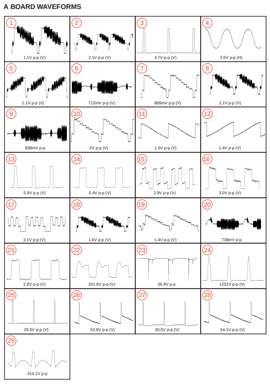
RESISTOR	:	RN	METAL FILM
	:	RC	SOLID
	:	FPRD	NON FLAMMABLE CARBON
	:	FUSE	NON FLAMMABLE FUSIBLE
	:	RW	NON FLAMMABLE WIREWOUND
	:	RS	NON FLAMMABLE METAL OXIDE
	:	RB	NON FLAMMABLE CEMENT
	:	※	ADJUSTMENT RESISTOR
COIL	:	LF-8L	MICRO INDUCTOR
CAPACITOR	:	TA	TANTALUM
	:	PS	STYROL
	:	PP	POLYPROPYLENE
	:	PT	MYLAR
	:	MPS	METALIZED POLYESTER
	:	MPP	METALIZED POLYPROPYLENE
	:	ALB	BIPOLAR
	:	ALT	HIGH TEMPERATURE
	:	ALR	HIGH RIPPLE

Note:

The components identified by shading and △ mark are critical for safety. Replace only with the part number specified.
The symbol (displayed on component side of the circuit board) indicates fast operating fuse. Replace only with fuse of the same rating as marked.

Les composants identifiés per un tramé et une marque △ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.
Le symbole indique une fusible a action rapide. Doit etre remplacee par une fusible de meme yaleur, comme marque.

A BOARD WAVEFORMS



A BOARD IC VOLTAGE LIST

IC001	
PIN	VOLT
1	1.0
2	4.8
3	0
4	.3
5	4.9
6	0
7	0
8	0
9	0
10	0
11	0
12	4.9
13	0
14	5.0
15	4.9
16	0
17	–0.4
18	4.9
19	5.0
20	1.8
21	0.2
22	2.2
23	0
24	2.4
25	2.4
26	0
27	4.9
28	0
29	0
30	5.0
31	5.0
32	.1
33	5.0
34	2.4
35	5.0
36	5.0
37	5.0
38	5.0
39	5.0
40	0
41	0
42	.1
43	5.0
44	.1
45	0
46	0
47	0
48	0
49	0
50	0
51	0
52	0

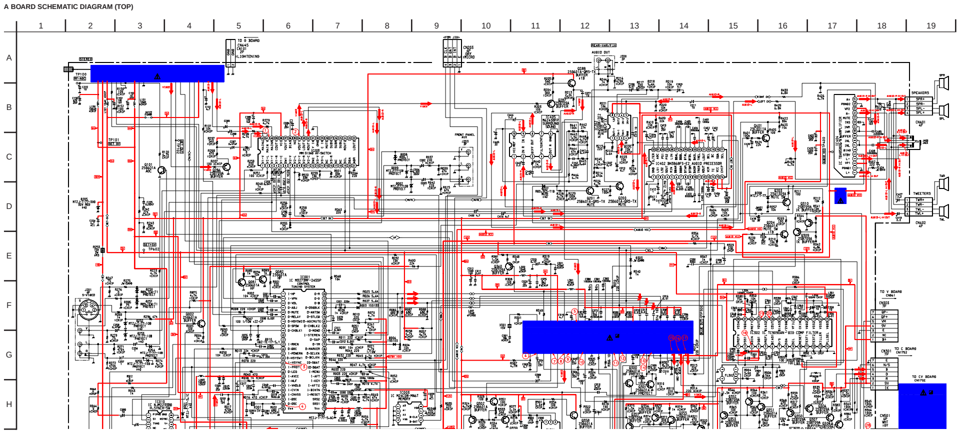
IC002	
PIN	VOLT
1	7.4
2	0
3	5.4
4	0
5	0
6	5.0
7	0
8	5.0
IC003	
PIN	VOLT
1	0
2	0
3	0
4	0
5	4.9
6	4.9
7	0
8	5.0
IC004	
PIN	VOLT
1	4.9
2	5.0
3	0
IC010	
PIN	VOLT
1	3.0
2	4.9
3	2.9
4	0
5	0
6	5.0
7	2.2
8	0
IC202	
PIN	VOLT
1	7.1
2	7.1
3	7.1
4	0
5	7.1
6	7.1
7	7.1
8	14.3
IC203	
PIN	VOLT
1	4.9
2	4.2
3	4.9
4	4.2
5	4.9
6	6.1
7	4.9
8	4.2
9	4.9
10	4.2
11	4.9
12	0
13	4.9
14	4.2
15	0
16	4.2
17	0
18	0
19	5.0
20	5.0
21	0
22	4.2
23	5.3
24	4.2
25	4.2
26	4.2
27	4.9
28	0
29	4.9
30	0
31	4.9
32	4.2
33	4.2
34	5.3
35	0
36	4.3
37	3.6
38	9.0
39	3.5
40	4.2
41	5.4
42	4.2

IC301	
PIN	VOLT
1	3.4
2	5.2
3	1.6
4	5.2
5	4.9
6	4.4
7	3.3
8	5.0
9	5.2
10	0
11	4.0
12	2.4
13	3.6
14	3.5
15	5.5
16	7.6
17	.7
18	1.1
19	3.1
20	2.6
21	1.8
22	1.4
23	1.5
24	1.7
25	.1
26	4.3
27	4.6
28	4.6
29	0
30	4.6
31	4.6
32	4.6
33	8.9
34	5.0
35	5.0
36	0
37	4.6
38	5.3
39	5.3
40	0
41	5.2
42	7.5
43	5.2
44	9.0
45	5.4
46	4.7
47	1.8
48	.1
IC302	
PIN	VOLT
1	3.6
2	0
3	2.4
4	5.1
5	1.5
6	1.4
7	0
8	5.0
9	5.0
10	0
11	0
12	0
13	0
14	0
15	5.1
16	0
17	0
18	5.2
19	2.5
20	1.9
21	2.5
22	3.6
23	4.1
24	1.7
25	4.0
26	3.1
27	5.2
28	0

IC402	
PIN	VOLT
1	0
2	0
3	0
4	4.7
5	4.5
6	4.5
7	4.5
8	4.5
9	4.5
10	4.5
11	4.5
12	4.5
13	0
14	2.0
15	9.0
16	9.0
17	0
18	4.9
19	2.0
20	0
21	4.5
22	4.5
23	4.5
24	4.5
25	4.5
26	4.5
27	4.5
28	4.5
29	4.5
30	4.5
31	3.7
32	4.5
IC404	
PIN	VOLT
1	7.1
2	0
3	14.2
4	7.1
5	3.7
6	0
7	4.0
8	4.0
9	6.9
10	4.0
11	4.0
12	4.0
13	.1
14	7.1
15	14.2
16	0
17	7.1
IC405	
PIN	VOLT
1	9.0
2	4.5
3	4.5
4	4.5
5	4.3
6	0
7	0
8	4.3
9	4.5
10	4.5
IC521	
PIN	VOLT
1	.1
2	3.5
3	2.4
4	0
5	9.3
6	10.2
7	0
8	13.1
IC541	
PIN	VOLT
1	1.8
2	13.1
3	–13.6
4	0
5	.3
6	13.2
7	1.8
IC603	
PIN	VOLT
I	12.8
O	9.0
G	0
4	12.8

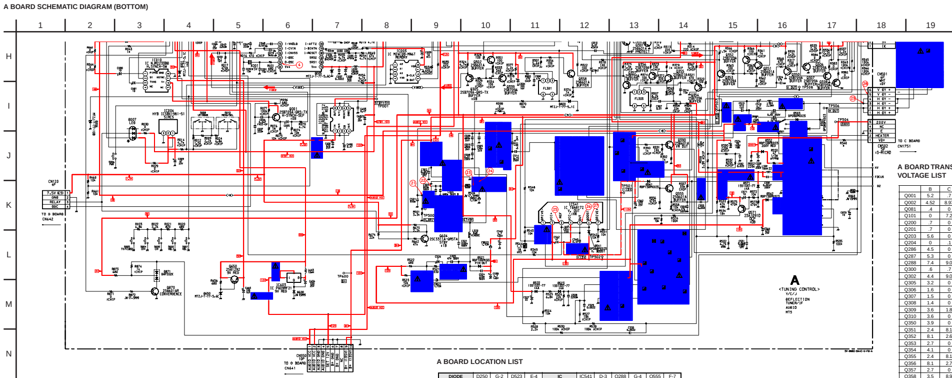
All voltages are in V

A BOARD SCHEMATIC DIAGRAM (TOP)



A Board (Top)

A BOARD SCHEMATIC DIAGRAM (BOTTOM)



A BOARD MARK (*) LIST

REF NO.	LOC.	KV-24FV10/25FV10	KV-25FV10C
R540	J-17	2.2K	JW (10MM)

A BOARD LOCATION LIST

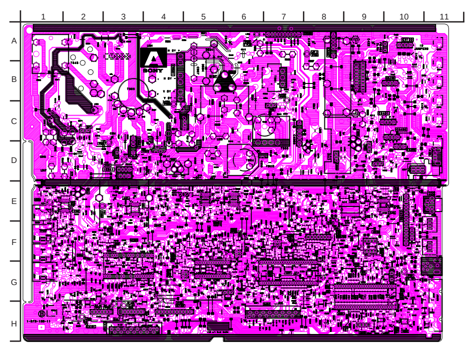
DIODE		D250	G-2	D523	E-4	IC		IC541	D-3	Q288	G-4	Q555	F-7
D001	E-4	D251	G-2	D541	E-3	IC001	G-9	IC603	D-9	Q300	F-8	Q571	C-2
D002	H-10	D252	G-3	D552	C-4	IC002	H-10	TRANSISTOR		Q301	E-8	Q604	F-6
D003	H-8	D253	G-2	D561	D-3	IC003	H-9	Q001	G-9	Q302	F-4	Q650	G-6
D004	H-8	D254	G-2	D562	D-3	IC004	D-11	Q002	H-4	Q305	F-4	Q870	G-8
D005	H-11	D255	H-1	D571	B-1	IC010	F-9	Q081	F-8	Q306	F-8		
D006	B-11	D302	G-8	D504	B-5	IC202	E-2	Q082	F-8	Q307	F-8		
D007	D-10	D501	A-5	D572	E-2	IC203	F-3	Q101	H-3	Q308	F-8		
D008	B-10	D502	C-5	D573	E-2	IC301	G-7	Q200	E-1	Q309	F-7		
D009	G-10	D503	C-5	D574	E-2	IC302	G-5	Q201	E-1	Q310	F-8		
D010	G-9	D504	B-5	D581	E-3	IC402	E-9	Q203	D-9	Q350	F-5		
D205	H-2	D520	C-6	D650	G-6	IC404	B-9	Q204	E-7	Q351	F-6		
D207	F-2	D521	D-5	D800	B-7	IC405	E-10	Q286	G-4	Q352	F-6		
D208	C-9	D522	E-4	D871	F-8	IC521	E-3	Q287	G-3	Q354	F-7		

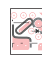
A BOARD TRANSISTOR VOLTAGE LIST

	B	C	E
Q001	5.2	.7	4.9
Q002	4.52	8.97	3.89
Q081	.4	0	.9
Q101	0	7.2	0
Q200	.7	0	0
Q201	.7	0	0
Q203	5.6	0	.1
Q204	0	.1	0
Q286	4.5	0	5.2
Q287	5.3	0	5.9
Q288	7.4	9.0	6.8
Q300	.6	.7	0
Q302	4.4	9.0	3.8
Q305	3.2	0	3.8
Q306	1.6	0	2.3
Q307	1.5	0	2.1
Q308	1.4	0	2.0
Q309	3.6	1.8	3.7
Q310	3.6	0	3.7
Q350	3.9	0	4.6
Q351	2.4	8.1	1.8
Q352	8.1	2.6	8.7
Q353	2.7	0	3.3
Q354	4.1	0	4.7
Q355	2.4	8.1	1.8
Q356	8.1	2.7	8.7
Q357	2.7	0	3.3
Q358	3.5	8.9	2.9
Q359	3.2	0	3.8
Q360	4.7	0	5.3
Q390	5.0	9.0	4.3
Q401	.6	0	0
Q501	-.8	97.7	0
Q502	-.2	135.6	0
Q521	.1	3.4	0
Q522	.1	21.1	0
Q555	2.0	9.0	2.2
Q571	134.7	10.7	134.5
Q604	.1	4.1	0
Q650	5.8	9.0	5.2
Q870	.3	3.9	0

All voltages are in V

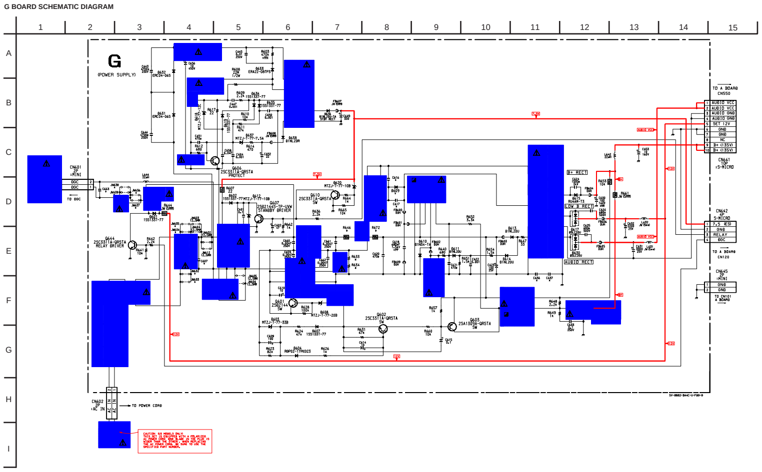
A [TUNING CONTROL, Y/C/J, DEFLECTION, TUNER/IF, AUDIO, MTS]





NOTE:
Portions of the circuit marked as shown are high voltage areas. Use care to prevent electric shocks during inspection or repair.

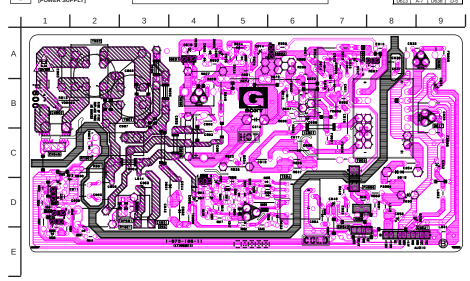
G BOARD SCHEMATIC DIAGRAM



A Board (Bottom) G Board

NOTE:
Portions of the circuit marked as shown are high voltage areas. Use care to prevent electric shocks during inspection or repair.

G [POWER SUPPLY]



G BOARD LOCATION LIST

DIODE				IC	
		D614	A-7		
D601	E-2	D615	C-8	IC601	B-6
D602	C-2	D617	B-9	IC602	D-7
D603	A-4	D618	D-5	TRANSISTOR	
D604	A-5	D619	D-5	Q601	A-4
D605	C-4	D620	E-1	Q602	A-5
D606	B-4	D630	A-9	Q603	A-7
D607	A-5	D631	D-3	Q605	D-5
D608	A-4	D632	D-4	Q606	D-4
D609	C-7	D633	D-6	Q607	D-1
D610	B-6	D634	D-5	Q610	D-1
D611	B-7	D635	D-5	Q644	D-1
D612	D-1	D637	D-4		
D613	A-7	D638	D-5		

G BOARD IC VOLTAGE LIST

IC601	
PIN	VOLT
1	–56.3
2	–58.0
3	101.4
4	–41.0
5	–58.1
IC602	
PIN	VOLT
1	134.9
2	123.1
3	0

All voltages are in V

G BOARD TRANSISTOR VOLTAGE LIST

	B	C	E
Q601	–58.1	–58.2	–58.5
Q602	–57.6	–40.8	–58.0
Q603	–40.8	–54.9	–40.8
Q606	.5	.8	.1
Q607	.7	.1	0
Q610	0	.7	0
Q644	0	13.6	0
	G	D	S
Q605	1.8	154.3	.1

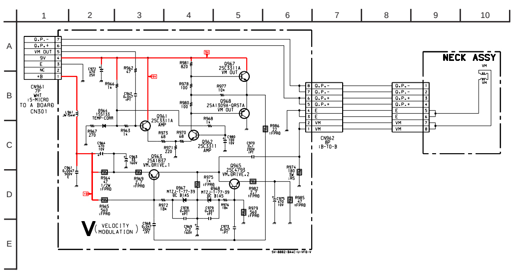
All voltages are in V

G BOARD MARK (*) LIST

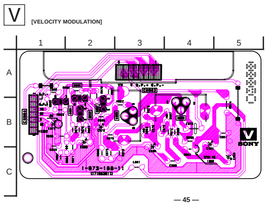
REF NO.	LOC.	KV-24FV10	KV-25FV10/10C
C600	F-2	0.47 125V	0.47 300V
C607	E-4	0.47 125V	0.47 300V
C613	E-7	680 250V	560 400V
C616	C-8	#	0.022 400V
C617	D-8	#	220p 1KV
C636	E-11	.0047 250V	#
C637	E-11	.0047 250V	#
C663	D-2	.22 125V	.22 300V
D609	D-8	#	RU-1P
F600	G-2	6.3A 125V	6.3A 250V
IC601	D-9	STR-F6626	STR-F6656
JW632	E-4	#	10MM
JW633	F-4	#	10MM
JW634	E-4	#	10MM
JW635	D-4	#	10MM
JW636	D-3	7.5MM	#
JW637	D-3	7.5MM	#
JW638	D-2	#	5MM
JW639	D-2	#	5MM
R600	F-5	#	8.2M
R601	F-4	4.7M	#
R633	E-7	390K	270K
R634	E-7	JW 5MM	270K
R637	D-8	#	100K
R646	E-7	15MM	5.6K
R672	E-8	15MM	5.6K
R674	E-7	15K	5.6K
T601	E-4	1-426-717-11	#
T602	F-3	1-431-838-11	1-426-717-11
T603	D-11	1-433-806-11	1-433-807-11
THP601	D-3	1-809-539-11	1-803-540-11
VDR600	G-2	1-803-585-11	1-803-587-11

#: Not mounted

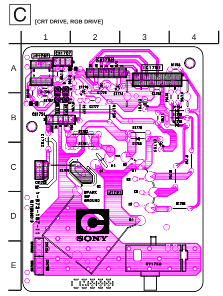
V BOARD SCHEMATIC DIAGRAM



V [VELOCITY MODULATION]



C [CRT DRIVE, RGB DRIVE]

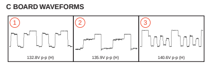


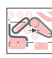
V BOARD TRANSISTOR VOLTAGE LIST

	B	C	E
Q961	2.4	9.0	1.8
Q962	2.4	5.5	1.8
Q963	134.4	83.7	134.8
Q965	.7	83.7	.1
Q967	6.2	9.0	5.9
Q968	5.5	0	5.9

All voltages are in V

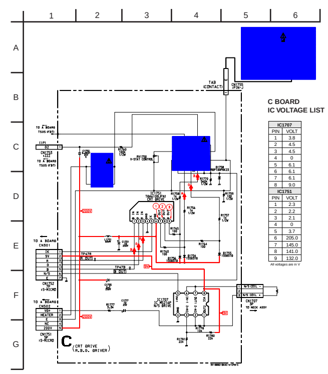
C BOARD WAVEFORMS





NOTE:
Portions of the circuit marked as shown are high voltage areas. Use care to prevent electric shocks during inspection or repair.

C BOARD SCHEMATIC DIAGRAM



C BOARD IC VOLTAGE LIST

IC1707	
PIN	VOLT
1	3.8
2	4.5
3	4.5
4	0
5	6.1
6	6.1
7	6.1
8	9.0

IC1751	
PIN	VOLT
1	2.3
2	2.2
3	2.1
4	0
5	3.7
6	205.0
7	145.0
8	141.0
9	132.0

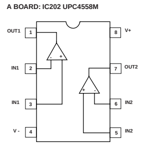
All voltages are in V

V C Boards

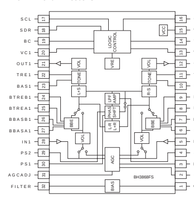
3/5/99, 12:10 PM

A BOARD IC BLOCK DIAGRAMS

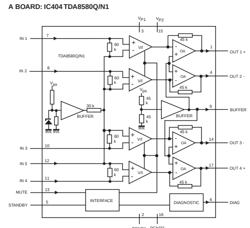
A BOARD: IC202 UPC4558M



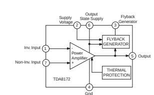
A BOARD: IC402 BH3868FS



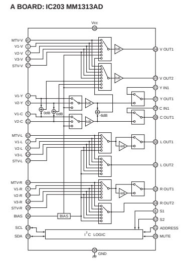
A BOARD: IC404 TDA8580Q/N1



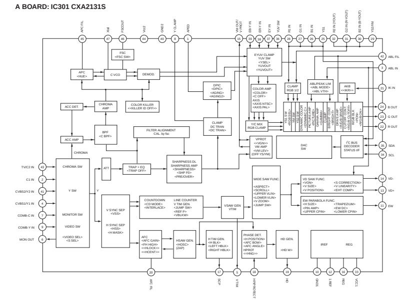
A BOARD IC541 TDA8172



A BOARD: IC203 MM1313AD

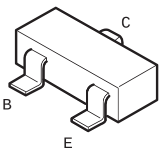


A BOARD: IC301 CXA2131S

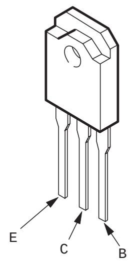


6-4. SEMICONDUCTORS

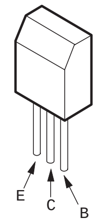
2SB709A
2SD601A



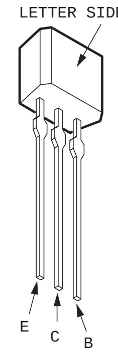
2SC5426-01



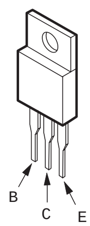
2SC3209LK-TP



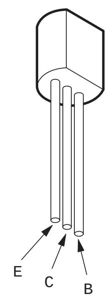
2SA1309A
2SC3311A
2SD2144S



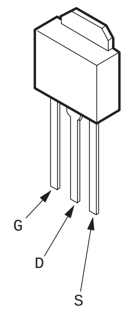
2SA1837
2SC4159-E



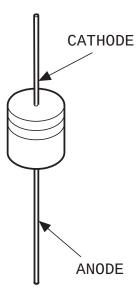
2SA1091O-TPE2
2SD1292



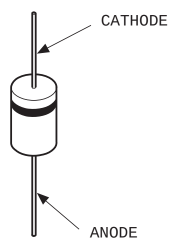
2SK2845



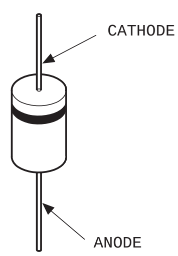
1SS133T-77
D1N2OR-TA
D1NS4-TA
MTZJ-T-7712C
MTZJ-T-77-20B
MTZJ-T-77-33B
MTZJ-T-77-39
RD3.3ES-T1B



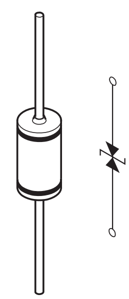
ERC04-06S
ERC06-15S
MTZJ-T-77-2.2A
MTZJ-T-77-5.1C
MTZJ-T-775.6C
MTZJ-T-77-7.5A
MTZJ-T-77-8.2B
MTZJ-T-77-10B
MTZJ-T-7730D
RU-1P



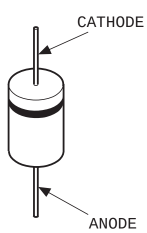
1SS83TD
D1NL2OU-TA
EL1Z-V1
ERA22-08TP3
GP08DPKG23
RGP02-17PKG23
RGP10GPKG3
RGP10GPKG23
RGP15GPKG23



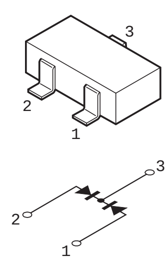
RD9.1EW-T1



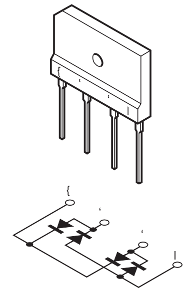
RU4AM-T3



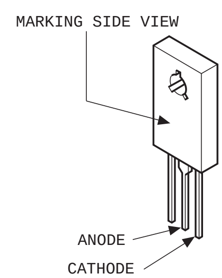
DAP202K-T-146



D4SB60L-F



D5LC20U



SECTION 7
EXPLODED VIEW

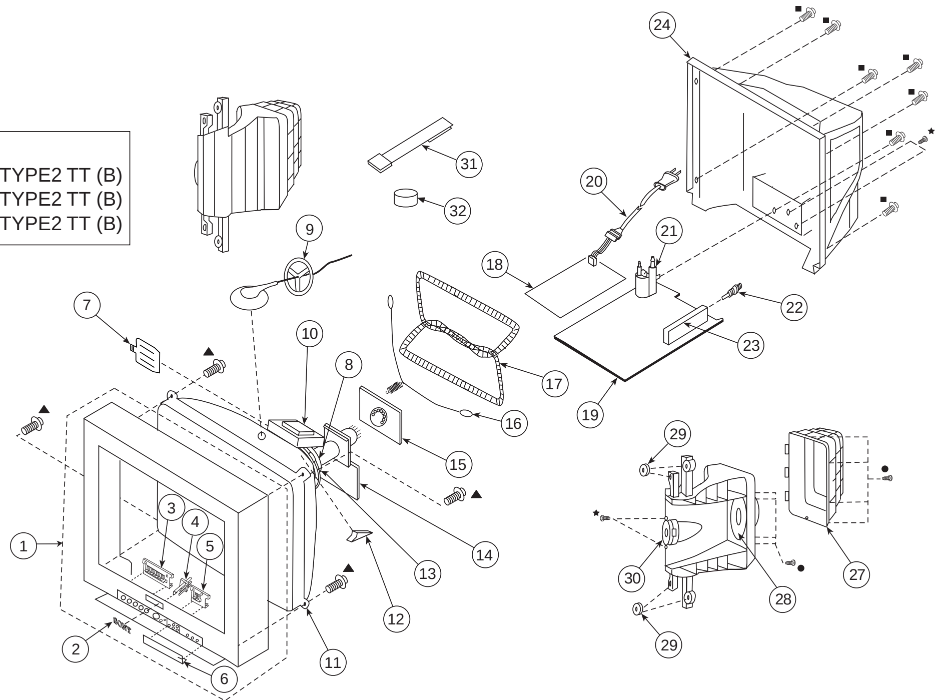
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The component parts of an assembly are indicated by the reference numbers in the remarks column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Note: **The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.**

Note: **Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.**

7-1. CHASSIS

▲ 4-041-268-01 SCREW (7) TAPPING
■ 7-685-663-79 SCREW +BVTP 4X16 TYPE2 TT (B)
● 7-685-661-91 SCREW +BVTP 4X12 TYPE2 TT (B)
★ 7-685-647-79 SCREW +BVTP 3X10 TYPE2 TT (B)



REF. NO.		PART NO.	DESCRIPTION	REMARK
1		X-4036-358-1	BEZNET ASSY	2-6
2		4-046-160-01	EMBLEM (NO. 9), SONY	
3		4-068-307-01	BUTTON, MULTI	
4		4-068-308-01	GUIDE, LED	
5		4-068-309-01	BUTTON, FUNCTION	
6		4-068-306-01	DOOR	
7		4-057-714-01	PIECE ASSY, TLH CORRECTION	
8		8-453-011-21	NECK ASSY (NA299-S)	
9		3-704-372-31	HOLDER, HV CABLE	
10		1-452-896-11	COIL, NA ROTATION (RT200)	
11	⚠	8-733-250-05	CRT (25RSN/A60LPN70X)	
12		4-053-005-01	SPACER, DY	
13	⚠	1-451-475-11	DEFLECTION YOKE (Y25RSA)	
14	*	A-1342-465-A	V MOUNTED PC BOARD	
15	*	A-1331-898-A	C MOUNTED PC BOARD	
16		4-036-329-01	SPRING (B), TENSION	
17	⚠	1-419-104-11	COIL, ALUMINIUM DEMAGNETIZATION (ALL EXCEPT KV-24FV10)	
17	⚠	1-416-925-11	COIL, ALUMINIUM DEGAUSSING (KV-24FV10 ONLY)	
18	*	A-1311-737-A	G (VAR) MOUNTED PC BOARD (KV-24FV10 ONLY)	
18	*	A-1311-754-A	G (VAR) MOUNTED PC BOARD (ALL EXCEPT KV-24FV10)	
19	*	A-1298-795-A	A COMPLETE PC BOARD (24FV10 ONLY)	
19	*	A-1298-920-A	A COMPLETE PC BOARD (ALL EXCEPT 24FV10)	
20	⚠	1-790-315-21	CORD, AC POWER (WITH CONNECTOR) 10A125V (KV-24FV10 ONLY)	
20	⚠	1-751-057-21	CORD, POWER (WITH CONNECTOR) 10A/125V (KV-25FV10 ONLY)	
20	⚠	1-769-796-71	CORD, POWER (WITH CONNECTOR) 10A/125V (KV-25FV10C ONLY)	
21	⚠	1-453-306-11	FBT, NX4011//X4J4	
22		1-766-374-11	PLUG, F-PIN	
23	⚠	8-598-431-00	TUNER, FSS BTF-WA411	
24		4-068-303-01	COVER, REAR	
27	*	4-068-305-01	BOX, SPEAKER	
28		1-529-334-11	SPEAKER (13X8CM)	
29		4-374-745-31	CUSHION (A)	
30		1-529-333-11	4CM TWEETER	
31		4-062-047-01	PIECE A (110), CONV CORRECT	
32		1-452-032-00	MAGNET, DISC	

SECTION 8
ELECTRICAL PARTS LIST

Note:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:

Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

- The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

CAPACITORS
- MF = μF

INDUCTORS
- UH = μH, MMH = mH

When indicating parts by reference number, please include the board name.

REF. NO.	PART NO.	DESCRIPTION	REMARK		

A

REF. NO.	PART NO.	DESCRIPTION	REMARK		
*	A-1298-920-A	A COMPLETE PC BOARD (KV-25FV10C ONLY)			
*	A-1298-795-A	A COMPLETE PC BOARD (ALL EXCEPT KV-25FV10C)			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
	4-070-495-01	HEAT SINK, AUDIO FD (IC404)			

CAPACITOR

REF. NO.	PART NO.	DESCRIPTION	REMARK		
C001	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C002	1-126-960-11	ELECT	1MF	20%	50V
C003	1-126-960-11	ELECT	1MF	20%	50V
C004	1-106-343-00	MYLAR	0.001MF	10%	200V
C005	1-126-960-11	ELECT	1MF	20%	50V
C006	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C007	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C008	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C009	1-104-664-11	ELECT	47MF	20%	25V
C011	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C012	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C014	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C017	1-126-960-11	ELECT	1MF	20%	50V
C019	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C020	1-130-495-00	FILM	0.1MF	5%	50V
C021	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C028	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C030	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C034	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C035	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C036	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C037	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C038	1-126-941-11	ELECT	470MF	20%	25V
C039	1-126-964-11	ELECT	10MF	20%	50V
C045	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C046	1-104-664-11	ELECT	47MF	20%	25V
C047	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C048	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C060	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C062	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C065	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C070	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C076	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C080	1-126-964-11	ELECT	10MF	20%	50V
C081	1-126-964-11	ELECT	10MF	20%	50V
C091	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C092	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C101	1-126-963-11	ELECT	4.7MF	20%	50V
C102	1-126-933-11	ELECT	100MF	20%	16V
C150	1-126-941-11	ELECT	470MF	20%	25V
C151	1-104-664-11	ELECT	47MF	20%	25V
C207	1-126-959-11	ELECT	0.47MF	20%	50V
C208	1-126-959-11	ELECT	0.47MF	20%	50V
C209	1-126-963-11	ELECT	4.7MF	20%	50V
C211	1-126-964-11	ELECT	10MF	20%	50V
C212	1-126-963-11	ELECT	4.7MF	20%	50V
C213	1-126-964-11	ELECT	10MF	20%	50V
C222	1-126-964-11	ELECT	10MF	20%	50V
C223	1-104-664-11	ELECT	47MF	20%	25V
C225	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C226	1-126-963-11	ELECT	4.7MF	20%	50V
C255	1-104-760-11	CERAMIC CHIP	0.047MF	10%	50V
C256	1-126-960-11	ELECT	1MF	20%	50V
C257	1-126-960-11	ELECT	1MF	20%	50V
C258	1-126-959-11	ELECT	0.47MF	20%	50V
C259	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C284	1-104-664-11	ELECT	47MF	20%	25V
C285	1-126-933-11	ELECT	100MF	20%	16V
C287	1-126-959-11	ELECT	0.47MF	20%	50V
C288	1-126-960-11	ELECT	1MF	20%	50V
C289	1-126-960-11	ELECT	1MF	20%	50V
C290	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C301	1-163-233-11	CERAMIC CHIP	18PF	5%	50V
C303	1-126-963-11	ELECT	4.7MF	20%	50V
C304	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C305	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C306	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V

A

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

REF. NO.	PART NO.	DESCRIPTION	REMARK		
C307	1-126-964-11	ELECT	10MF	20%	50V
C308	1-126-964-11	ELECT	10MF	20%	50V
C309	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C310	1-126-960-11	ELECT	1MF	20%	50V
C311	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C312	1-126-767-11	ELECT	1000MF	20%	16V
C313	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C314	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C316	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C317	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C318	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C319	1-126-963-11	ELECT	4.7MF	20%	50V
C320	1-126-959-11	ELECT	0.47MF	20%	50V
C321	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C324	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C330	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C332	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C334	1-126-933-11	ELECT	100MF	20%	16V
C350	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C351	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C352	1-126-964-11	ELECT	10MF	20%	50V
C353	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C354	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C355	1-126-933-11	ELECT	100MF	20%	16V
C356	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C357	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C358	1-126-964-11	ELECT	10MF	20%	50V
C359	1-126-964-11	ELECT	10MF	20%	50V
C360	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C361	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C362	1-126-960-11	ELECT	1MF	20%	50V
C364	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C365	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C366	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C367	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C368	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C369	1-126-964-11	ELECT	10MF	20%	50V
C373	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C374	1-126-941-11	ELECT	470MF	20%	25V
C375	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C376	1-104-664-11	ELECT	47MF	20%	25V
C377	1-126-964-11	ELECT	10MF	20%	50V
C380	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C381	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C382	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C390	1-126-959-11	ELECT	0.47MF	20%	50V
C396	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C397	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C398	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C399	1-126-964-11	ELECT	10MF	20%	50V
C400	1-126-963-11	ELECT	4.7MF	20%	50V
C401	1-126-963-11	ELECT	4.7MF	20%	50V
C402	1-126-963-11	ELECT	4.7MF	20%	50V
C403	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C404	1-163-034-00	CERAMIC CHIP	0.033MF		50V
C405	1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V
C406	1-163-034-00	CERAMIC CHIP	0.033MF		50V
C407	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C410	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C411	1-126-933-11	ELECT	100MF	20%	16V
C412	1-126-960-11	ELECT	1MF	20%	50V
C413	1-126-960-11	ELECT	1MF	20%	50V
C414	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C415	1-163-034-00	CERAMIC CHIP	0.033MF		50V
C416	1-126-963-11	ELECT	4.7MF	20%	50V
C417	1-126-933-11	ELECT	100MF	20%	16V
C418	1-126-964-11	ELECT	10MF	20%	50V
C419	1-126-961-11	ELECT	2.2MF	20%	50V
C420	1-126-960-11	ELECT	1MF	20%	50V
C422	1-126-943-11	ELECT	2200MF	20%	25V
C425	1-126-943-11	ELECT	2200MF	20%	25V
C427	1-126-961-11	ELECT	2.2MF	20%	50V
C428	1-136-169-00	FILM	0.22MF	5%	50V
C430	1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V
C431	1-163-034-00	CERAMIC CHIP	0.033MF		50V
C432	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C433	1-126-963-11	ELECT	4.7MF	20%	50V
C434	1-126-963-11	ELECT	4.7MF	20%	50V
C435	1-136-169-00	FILM	0.22MF	5%	50V
C440	1-137-194-81	FILM	0.47MF	5%	50V
C441	1-137-194-81	FILM	0.47MF	5%	50V
C442	1-162-114-00	CERAMIC	0.0047MF		2KV
C443	1-126-961-11	ELECT	2.2MF	20%	50V
C444	1-126-961-11	ELECT	2.2MF	20%	50V
C445	1-126-965-11	ELECT	22MF	20%	50V
C501	1-102-112-00	CERAMIC	330PF	10%	50V
C502	1-106-383-00	MYLAR	0.047MF	10%	200V
C503	1-102-212-00	CERAMIC	820PF	10%	500V
C504	1-102-002-00	CERAMIC	680PF	10%	500V
C505	1-162-129-00	CERAMIC	150PF	10%	2KV
C507	⚠ 1-136-617-11	FILM	0.019MF	3%	2KV
C508	1-107-364-11	MYLAR	0.01MF	10%	200V
C509	1-162-116-00	CERAMIC	680PF	10%	2KV
C510	1-107-651-11	ELECT	4.7MF	20%	250V
C511	1-115-521-11	FILM	0.82MF	5%	250V
C512	⚠ 1-106-383-00	MYLAR	0.047MF	10%	200V

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

A

REF. NO.		PART NO.	DESCRIPTION	REMARK		
C513		1-102-002-00	CERAMIC	680PF	10%	500V
C514		1-117-813-21	FILM	0.75MF	5%	250V
C515		1-162-116-00	CERAMIC	680PF	10%	2KV
C516		1-117-214-11	CERAMIC	0.001MF	10%	2KV
C520	⚠	1-130-895-00	FILM	0.056MF	10%	400V
C521		1-164-645-11	CERAMIC	1000PF	10%	500V
C522		1-117-661-21	FILM	0.15MF	5%	250V
C524		1-102-244-00	CERAMIC	220PF	10%	500V
C525		1-162-815-11	CERAMIC	47PF	5%	500V
C526		1-126-960-11	ELECT	1MF	20%	50V
C527		1-126-965-11	ELECT	22MF	20%	50V
C528		1-164-690-91	CERAMIC CHIP	0.0022MF	5%	50V
C529		1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C530		1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C531		1-106-387-00	MYLAR	0.068MF	10%	200V
C539		1-107-635-11	ELECT	4.7MF	20%	160V
C540		1-107-635-11	ELECT	4.7MF	20%	160V
C541		1-126-969-11	ELECT	220MF	20%	50V
C542		1-126-967-11	ELECT	47MF	20%	50V
C543		1-137-194-81	FILM	0.47MF	5%	50V
C550		1-162-815-11	CERAMIC	47PF	5%	500V
C553		1-107-662-11	ELECT	22MF	20%	250V
C555		1-115-185-11	CERAMIC CHIP	0.033MF	10%	50V
C562		1-126-941-11	ELECT	470MF	20%	25V
C564		1-126-941-11	ELECT	470MF	20%	25V
C571		1-126-964-11	ELECT	10MF	20%	50V
C573	⚠	1-126-963-11	ELECT	4.7MF	20%	50V
C574	⚠	1-107-635-11	ELECT	4.7MF	20%	160V
C575	⚠	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C576		1-123-024-21	ELECT	33MF		160V
C591		1-137-417-11	MYLAR	0.0047MF	10%	200V
C592		1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C629		1-104-665-11	ELECT	100MF	20%	25V
C634		1-104-665-11	ELECT	100MF	20%	25V
C665		1-126-933-11	ELECT	100MF	20%	16V
C690		1-126-959-11	ELECT	0.47MF	20%	50V
C691		1-126-941-11	ELECT	470MF	20%	25V
C692		1-104-664-11	ELECT	47MF	20%	25V
C693		1-137-194-81	FILM	0.47MF	5%	50V
C870		1-107-906-11	ELECT	10MF	20%	50V
C900		1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C904		1-104-664-11	ELECT	47MF	20%	25V
C907		1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V

CONNECTOR

REF. NO.		PART NO.	DESCRIPTION	REMARK
CN101	*	1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P	
CN120	*	1-564-507-11	PLUG, CONNECTOR 4P	
CN203	*	1-560-124-00	PLUG, CONNECTOR (2.5MM) 4P	
CN301	*	1-564-510-11	PLUG, CONNECTOR 7P	
CN303	*	1-564-510-11	PLUG, CONNECTOR 7P	
CN401	*	1-564-507-11	PLUG, CONNECTOR 4P	
CN402	*	1-564-507-11	PLUG, CONNECTOR 4P	
CN501	*	1-580-798-11	CONNECTOR PIN (DY) 6P	
CN502	*	1-564-508-11	PLUG, CONNECTOR 5P	
CN550	*	1-564-513-11	PLUG, CONNECTOR 10P	

DIODE

REF. NO.		PART NO.	DESCRIPTION	REMARK
D001		8-719-921-44	DIODE MTZJ-5.1C	
D002		8-719-110-17	DIODE RD10ESB2	
D003		8-719-991-33	DIODE 1SS133T-77	
D004		8-719-991-33	DIODE 1SS133T-77	
D005		8-719-109-89	DIODE RD5.6ESB2	
D006		8-719-110-17	DIODE RD10ESB2	
D007		8-719-074-84	DIODE LNK0120022G1	
D008		8-719-108-12	DIODE RD9.1EW	
D009		8-719-110-17	DIODE RD10ESB2	
D010		8-719-976-99	DIODE DTZ5.1B	
D205		8-719-982-22	DIODE MTZJ-30D	
D207		8-719-109-66	DIODE RD3.3ESB2	
D208		8-719-110-08	DIODE RD8.2ESB2	
D250		8-719-108-12	DIODE RD9.1EW	
D251		8-719-108-12	DIODE RD9.1EW	
D252		8-719-110-17	DIODE RD10ESB2	
D253		8-719-110-17	DIODE RD10ESB2	
D254		8-719-110-17	DIODE RD10ESB2	
D255		8-719-110-17	DIODE RD10ESB2	
D302		8-719-976-99	DIODE DTZ5.1B	
D501	⚠	8-719-945-80	DIODE ERC06-15S	
D502		8-719-908-03	DIODE GP08D	
D503		8-719-908-03	DIODE GP08D	
D504	⚠	8-719-945-80	DIODE ERC06-15S	
D520	⚠	8-719-067-63	DIODE MDV04-600RL	
D521		8-719-302-43	DIODE EL1Z	
D522		8-719-991-33	DIODE 1SS133T-77	
D523		8-719-991-33	DIODE 1SS133T-77	
D541		8-719-908-03	DIODE GP08D	
D552		8-719-302-43	DIODE EL1Z	
D561		8-719-979-85	DIODE EGP20G	
D562		8-719-979-85	DIODE EGP20G	
D571		8-719-991-33	DIODE 1SS133T-77	
D572	⚠	8-719-991-33	DIODE 1SS133T-77	
D573	⚠	8-719-110-08	DIODE RD8.2ESB2	

A

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

REF. NO.		PART NO.	DESCRIPTION	REMARK
D574	⚠	8-719-302-43	DIODE EL1Z	
D581	⚠	8-719-991-33	DIODE 1SS133T-77	
D650		8-719-109-89	DIODE RD5.6ESB2	
D800		8-719-921-44	DIODE MTZJ-5.1C	
D871		8-719-914-44	DIODE DAP202K	

FERRITE BEAD

REF. NO.		PART NO.	DESCRIPTION	REMARK
FB501		1-410-397-21	FERRITE	1.1UH
FB521		1-410-397-21	FERRITE	1.1UH
FB522		1-410-397-21	FERRITE	1.1UH

FILTER

REF. NO.		PART NO.	DESCRIPTION	REMARK
FL301		1-239-847-11	FILTER, LOW PASS	
FL302		1-239-847-11	FILTER, LOW PASS	
FL303		1-239-847-11	FILTER, LOW PASS	

IC

REF. NO.		PART NO.	DESCRIPTION	REMARK
IC001		8-759-594-76	IC M3273MF-245SP	
IC002		8-759-575-47	IC NJM78LR05BM-TE2	
IC003		8-759-527-76	IC M24C08-MN6T	
IC004		8-742-014-11	HYB IC SBX1981-51	
IC010		8-759-710-85	IC NJM2233BD	
IC202		8-759-100-96	IC NJM4558M-TE2	
IC203		8-759-534-81	IC MM1313AD/	
IC301	⚠	8-752-088-86	IC CXA2131S	
IC302		8-759-433-10	IC TC9090AN	
IC402		8-759-578-88	IC BH3868FS-E2	
IC404		8-759-573-40	IC TDA8580Q/N1	
IC405		8-759-577-91	IC M62438FP-600D	
IC521	⚠	8-759-700-07	IC NJM2903M-TE2	
IC541		8-759-980-58	IC TDA8172	
IC603		8-759-198-03	IC PQ09RF21	

JACK

REF. NO.		PART NO.	DESCRIPTION	REMARK
J200		1-774-750-21	JACK BLOCK, PIN 2P	
J201		1-774-751-11	TERMINAL BLOCK, S	
J203		1-691-110-11	JACK, PIN 3P	
J400		1-568-267-21	JACK	

CHIP CONDUCTOR

REF. NO.		PART NO.	DESCRIPTION	REMARK
JR001		1-216-295-91	SHORT	
JR003		1-216-295-91	SHORT	
JR004		1-216-295-91	SHORT	
JR005		1-216-295-91	SHORT	
JR006		1-216-295-91	SHORT	
JR007		1-216-295-91	SHORT	
JR008		1-216-295-91	SHORT	
JR010		1-216-295-91	SHORT	
JR011		1-216-295-91	SHORT	

COIL

REF. NO.		PART NO.	DESCRIPTION	REMARK
L001		1-414-267-11	INDUCTOR	10UH
L002		1-414-273-11	INDUCTOR	100UH
L003		1-414-273-11	INDUCTOR	100UH
L101		1-414-267-11	INDUCTOR	10UH
L150		1-414-273-11	INDUCTOR	100UH
L151		1-414-267-11	INDUCTOR	10UH
L301		1-414-271-11	INDUCTOR	47UH
L302		1-414-267-11	INDUCTOR	10UH
L303		1-414-273-11	INDUCTOR	100UH
L304		1-414-273-11	INDUCTOR	100UH
L350		1-414-273-11	INDUCTOR	100UH
L351		1-414-273-11	INDUCTOR	100UH
L502		1-412-552-11	INDUCTOR	2.2MMH
L503	⚠	1-406-677-11	INDUCTOR	10MMH
L504		1-412-533-21	INDUCTOR	47UH
L505		1-406-978-11	INDUCTOR	150UH
L520		1-409-955-11	INDUCTOR	8MMH
L591		1-412-528-61	INDUCTOR	18UH
L643		1-412-525-31	INDUCTOR	10UH

IC LINK

REF. NO.		PART NO.	DESCRIPTION	REMARK
PS403	⚠	1-532-984-11	LINK, IC	2A/90V

TRANSISTOR

REF. NO.		PART NO.	DESCRIPTION	REMARK
Q001		8-729-216-22	TRANSISTOR 2SA1162-G	
Q002		8-729-422-27	TRANSISTOR 2SD601A-Q	
Q081		8-729-422-27	TRANSISTOR 2SD601A-Q	
Q082		8-729-422-27	TRANSISTOR 2SD601A-Q	
Q101		8-729-422-27	TRANSISTOR 2SD601A-Q	
Q200		8-729-422-27	TRANSISTOR 2SD601A-Q	
Q201		8-729-422-27	TRANSISTOR 2SD601A-Q	
Q203		8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q204		8-729-422-27	TRANSISTOR 2SD601A-Q	
Q286		8-729-216-22	TRANSISTOR 2SA1162-G	
Q287		8-729-216-22	TRANSISTOR 2SA1162-G	
Q288		8-729-422-27	TRANSISTOR 2SD601A-Q	
Q300		8-729-422-27	TRANSISTOR 2SD601A-Q	
Q301		8-729-422-27	TRANSISTOR 2SD601A-Q	
Q302		8-729-422-27	TRANSISTOR 2SD601A-Q	

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

A

REF. NO.		PART NO.	DESCRIPTION				REMARK
Q305		8-729-216-22	TRANSISTOR 2SA1162-G				
Q306		8-729-216-22	TRANSISTOR 2SA1162-G				
Q307		8-729-216-22	TRANSISTOR 2SA1162-G				
Q308		8-729-216-22	TRANSISTOR 2SA1162-G				
Q309		8-729-216-22	TRANSISTOR 2SA1162-G				
Q310		8-729-216-22	TRANSISTOR 2SA1162-G				
Q350		8-729-216-22	TRANSISTOR 2SA1162-G				
Q351		8-729-422-27	TRANSISTOR 2SD601A-Q				
Q352		8-729-216-22	TRANSISTOR 2SA1162-G				
Q353		8-729-216-22	TRANSISTOR 2SA1162-G				
Q354		8-729-216-22	TRANSISTOR 2SA1162-G				
Q355		8-729-422-27	TRANSISTOR 2SD601A-Q				
Q356		8-729-216-22	TRANSISTOR 2SA1162-G				
Q357		8-729-216-22	TRANSISTOR 2SA1162-G				
Q358		8-729-422-27	TRANSISTOR 2SD601A-Q				
Q359		8-729-216-22	TRANSISTOR 2SA1162-G				
Q360		8-729-216-22	TRANSISTOR 2SA1162-G				
Q390		8-729-422-27	TRANSISTOR 2SD601A-Q				
Q401		8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q501	⚠	8-729-140-50	TRANSISTOR 2SC3209LK				
Q502	⚠	8-729-046-07	TRANSISTOR 2SD2578-YD				
Q521	⚠	8-729-422-27	TRANSISTOR 2SD601A-Q				
Q522	⚠	8-729-809-29	TRANSISTOR 2SC4159-E				
Q555		8-729-422-27	TRANSISTOR 2SD601A-Q				
Q571		8-729-200-17	TRANSISTOR 2SA1091-O				
Q604		8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q650		8-729-111-55	TRANSISTOR 2SD1312-K				
Q870		8-729-422-27	TRANSISTOR 2SD601A-Q				
		RESISTOR					
R001		1-216-033-00	RES,CHIP	220	5%	1/10W	
R002		1-216-073-00	RES,CHIP	10K	5%	1/10W	
R003		1-216-033-00	RES,CHIP	220	5%	1/10W	
R004		1-216-073-00	RES,CHIP	10K	5%	1/10W	
R005		1-216-025-91	RES,CHIP	100	5%	1/10W	
R006		1-216-049-91	RES,CHIP	1K	5%	1/10W	
R007		1-216-025-91	RES,CHIP	100	5%	1/10W	
R008		1-216-033-00	RES,CHIP	220	5%	1/10W	
R009		1-216-057-00	RES,CHIP	2.2K	5%	1/10W	
R010		1-216-033-00	RES,CHIP	220	5%	1/10W	
R011		1-216-033-00	RES,CHIP	220	5%	1/10W	
R012		1-216-053-00	RES,CHIP	1.5K	5%	1/10W	
R013		1-216-081-00	RES,CHIP	22K	5%	1/10W	
R014		1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R015		1-216-089-91	RES,CHIP	47K	5%	1/10W	
R016		1-216-041-00	RES,CHIP	470	5%	1/10W	
R017		1-216-113-00	RES,CHIP	470K	5%	1/10W	

REF. NO.	PART NO.	DESCRIPTION			REMARK
R018	1-216-049-91	RES,CHIP	1K	5%	1/10W
R019	1-208-798-11	RES,CHIP	4.7K	0.50%	1/10W
R020	1-249-415-11	CARBON	680	5%	1/4W
R021	1-249-416-11	CARBON	820	5%	1/4W
R022	1-249-421-11	CARBON	2.2K	5%	1/4W
R023	1-249-427-11	CARBON	6.8K	5%	1/4W
R024	1-216-069-00	RES,CHIP	6.8K	5%	1/10W
R025	1-249-426-11	CARBON	5.6K	5%	1/4W
R026	1-249-426-11	CARBON	5.6K	5%	1/4W
R027	1-249-426-11	CARBON	5.6K	5%	1/4W
R028	1-216-049-91	RES,CHIP	1K	5%	1/10W
R029	1-216-295-91	SHORT			
R030	1-216-295-91	SHORT			
R031	1-216-045-00	RES,CHIP	680	5%	1/10W
R032	1-247-815-91	CARBON	220	5%	1/4W
R033	1-247-815-91	CARBON	220	5%	1/4W
R034	1-216-033-00	RES,CHIP	220	5%	1/10W
R035	1-216-033-00	RES,CHIP	220	5%	1/10W
R037	1-216-033-00	RES,CHIP	220	5%	1/10W
R038	1-216-049-91	RES,CHIP	1K	5%	1/10W
R039	1-216-089-91	RES,CHIP	47K	5%	1/10W
R040	1-249-413-11	CARBON	470	5%	1/4W
R042	1-216-033-00	RES,CHIP	220	5%	1/10W
R043	1-249-417-11	CARBON	1K	5%	1/4W
R044	1-247-815-91	CARBON	220	5%	1/4W
R045	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R046	1-247-815-91	CARBON	220	5%	1/4W
R047	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R048	1-216-025-91	RES,CHIP	100	5%	1/10W
R049	1-216-089-91	RES,CHIP	47K	5%	1/10W
R050	1-216-073-00	RES,CHIP	10K	5%	1/10W
R051	1-216-033-00	RES,CHIP	220	5%	1/10W
R052	1-216-049-91	RES,CHIP	1K	5%	1/10W
R054	1-249-425-11	CARBON	4.7K	5%	1/4W
R055	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R056	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R057	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R058	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R060	1-216-295-91	SHORT			
R064	1-216-295-91	SHORT			
R068	1-249-429-11	CARBON	10K	5%	1/4W
R070	1-249-425-11	CARBON	4.7K	5%	1/4W
R071	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R073	1-249-425-11	CARBON	4.7K	5%	1/4W
R074	1-216-073-00	RES,CHIP	10K	5%	1/10W
R075	1-216-073-00	RES,CHIP	10K	5%	1/10W
R076	1-216-121-91	RES,CHIP	1M	5%	1/10W
R077	1-216-097-91	RES,CHIP	100K	5%	1/10W

A

REF. NO.	PART NO.	DESCRIPTION		REMARK		
R078	1-247-815-91	CARBON	220	5%	1/4W	
R085	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R086	1-216-045-00	RES,CHIP	680	5%	1/10W	
R087	1-216-045-00	RES,CHIP	680	5%	1/10W	
R088	1-216-045-00	RES,CHIP	680	5%	1/10W	
R089	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R091	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R092	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R094	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R095	1-216-033-00	RES,CHIP	220	5%	1/10W	
R096	1-216-045-00	RES,CHIP	680	5%	1/10W	
R101	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R120	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R150	1-216-025-91	RES,CHIP	100	5%	1/10W	
R151	1-216-025-91	RES,CHIP	100	5%	1/10W	
R203	1-216-025-91	RES,CHIP	100	5%	1/10W	
R204	1-216-043-91	RES,CHIP	560	5%	1/10W	
R205	1-216-043-91	RES,CHIP	560	5%	1/10W	
R207	1-216-025-91	RES,CHIP	100	5%	1/10W	
R209	1-216-025-91	RES,CHIP	100	5%	1/10W	
R210	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R211	1-247-807-31	CARBON	100	5%	1/4W	
R213	1-216-057-00	RES,CHIP	2.2K	5%	1/10W	
R214	1-216-113-00	RES,CHIP	470K	5%	1/10W	
R215	1-216-033-00	RES,CHIP	220	5%	1/10W	
R216	1-216-113-00	RES,CHIP	470K	5%	1/10W	
R217	1-216-033-00	RES,CHIP	220	5%	1/10W	
R218	1-216-071-00	RES,CHIP	8.2K	5%	1/10W	
R219	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R220	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R221	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R222	1-216-071-00	RES,CHIP	8.2K	5%	1/10W	
R223	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R224	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R225	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R226	1-249-425-11	CARBON	4.7K	5%	1/4W	
R227	1-216-097-91	RES,CHIP	100K	5%	1/10W	
R228	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R229	1-216-097-91	RES,CHIP	100K	5%	1/10W	
R230	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R241	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R242	1-216-083-00	RES,CHIP	27K	5%	1/10W	
R243	1-216-689-11	RES,CHIP	39K	5%	1/10W	
R244	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R245	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R248	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R249	1-216-025-91	RES,CHIP	100	5%	1/10W	
R250	1-216-033-00	RES,CHIP	220	5%	1/10W	
R251	1-216-025-91	RES,CHIP	100	5%	1/10W	
R252	1-216-033-00	RES,CHIP	220	5%	1/10W	
R253	1-215-899-11	METAL OXIDE	15K	5%	2W	F
R254	1-216-033-00	RES,CHIP	220	5%	1/10W	
R255	1-216-022-00	RES,CHIP	75	5%	1/10W	
R256	1-216-033-00	RES,CHIP	220	5%	1/10W	
R257	1-249-429-11	CARBON	10K	5%	1/4W	
R258	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R259	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R263	1-247-815-91	CARBON	220	5%	1/4W	
R264	1-247-815-91	CARBON	220	5%	1/4W	
R267	1-216-022-00	RES,CHIP	75	5%	1/10W	
R269	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R270	1-216-022-00	RES,CHIP	75	5%	1/10W	
R271	1-216-113-00	RES,CHIP	470K	5%	1/10W	
R272	1-216-113-00	RES,CHIP	470K	5%	1/10W	
R273	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R274	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R276	1-216-295-91	SHORT				
R277	1-216-295-91	SHORT				
R279	1-249-425-11	CARBON	4.7K	5%	1/4W	
R296	1-249-437-11	CARBON	47K	5%	1/4W	
R297	1-216-043-91	RES,CHIP	560	5%	1/10W	
R298	1-216-041-00	RES,CHIP	470	5%	1/10W	
R299	1-249-425-11	CARBON	4.7K	5%	1/4W	
R301	1-216-295-91	SHORT				
R304	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R305	1-216-033-00	RES,CHIP	220	5%	1/10W	
R306	1-208-806-11	RES,CHIP	10K	0.50%	1/10W	
R307	1-216-071-00	RES,CHIP	8.2K	5%	1/10W	
R308	1-216-025-91	RES,CHIP	100	5%	1/10W	
R310	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R312	1-216-033-00	RES,CHIP	220	5%	1/10W	
R313	1-216-033-00	RES,CHIP	220	5%	1/10W	
R314	1-216-033-00	RES,CHIP	220	5%	1/10W	
R315	1-216-033-00	RES,CHIP	220	5%	1/10W	
R316	1-247-807-31	CARBON	100	5%	1/4W	
R317	1-216-025-91	RES,CHIP	100	5%	1/10W	
R318	1-216-025-91	RES,CHIP	100	5%	1/10W	
R319	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R320	1-247-807-31	CARBON	100	5%	1/4W	
R321	1-216-041-00	RES,CHIP	470	5%	1/10W	
R322	1-216-025-91	RES,CHIP	100	5%	1/10W	
R323	1-216-037-00	RES,CHIP	330	5%	1/10W	
R324	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R328	1-247-807-31	CARBON	100	5%	1/4W	
R329	1-216-025-91	RES,CHIP	100	5%	1/10W	
R330	1-216-025-91	RES,CHIP	100	5%	1/10W	
R331	1-216-025-91	RES,CHIP	100	5%	1/10W	
R333	1-216-043-91	RES,CHIP	560	5%	1/10W	

Note:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:

Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

A

REF. NO.	PART NO.	DESCRIPTION		REMARK	
R334	1-216-025-91	RES,CHIP	100	5%	1/10W
R335	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R336	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R337	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R338	1-216-073-00	RES,CHIP	10K	5%	1/10W
R339	1-216-047-91	RES,CHIP	820	5%	1/10W
R340	1-249-417-11	CARBON	1K	5%	1/4W
R341	1-216-073-00	RES,CHIP	10K	5%	1/10W
R342	1-216-069-00	RES,CHIP	6.8K	5%	1/10W
R343	1-216-097-91	RES,CHIP	100K	5%	1/10W
R344	1-216-295-91	SHORT			
R345	1-216-097-91	RES,CHIP	100K	5%	1/10W
R346	1-216-097-91	RES,CHIP	100K	5%	1/10W
R347	1-216-049-91	RES,CHIP	1K	5%	1/10W
R348	1-216-295-91	SHORT			
R349	1-216-295-91	SHORT			
R350	1-208-806-11	RES,CHIP	10K	0.50%	1/10W
R351	1-216-025-91	RES,CHIP	100	5%	1/10W
R352	1-216-053-00	RES,CHIP	1.5K	5%	1/10W
R353	1-216-025-91	RES,CHIP	100	5%	1/10W
R354	1-216-025-91	RES,CHIP	100	5%	1/10W
R355	1-216-025-91	RES,CHIP	100	5%	1/10W
R356	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R359	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R361	1-216-049-91	RES,CHIP	1K	5%	1/10W
R362	1-216-043-91	RES,CHIP	560	5%	1/10W
R363	1-216-037-00	RES,CHIP	330	5%	1/10W
R364	1-216-025-91	RES,CHIP	100	5%	1/10W
R365	1-216-025-91	RES,CHIP	100	5%	1/10W
R366	1-216-053-00	RES,CHIP	1.5K	5%	1/10W
R367	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R368	1-216-041-00	RES,CHIP	470	5%	1/10W
R369	1-216-043-91	RES,CHIP	560	5%	1/10W
R370	1-216-033-00	RES,CHIP	220	5%	1/10W
R372	1-216-037-00	RES,CHIP	330	5%	1/10W
R373	1-216-025-91	RES,CHIP	100	5%	1/10W
R374	1-216-025-91	RES,CHIP	100	5%	1/10W
R375	1-216-053-00	RES,CHIP	1.5K	5%	1/10W
R376	1-216-049-91	RES,CHIP	1K	5%	1/10W
R377	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R378	1-216-295-91	SHORT			
R379	1-216-049-91	RES,CHIP	1K	5%	1/10W
R380	1-208-810-11	RES,CHIP	15K	0.50%	1/10W
R381	1-216-053-00	RES,CHIP	1.5K	5%	1/10W
R382	1-216-295-91	SHORT			
R383	1-216-295-91	SHORT			
R384	1-216-295-91	SHORT			
R386	1-216-073-00	RES,CHIP	10K	5%	1/10W

REF. NO.		PART NO.	DESCRIPTION		REMARK		
R387		1-259-884-11	CARBON	4.7M	5%	1/4W	
R390		1-216-049-91	RES,CHIP	1K	5%	1/10W	
R391		1-216-073-00	RES,CHIP	10K	5%	1/10W	
R392		1-216-049-91	RES,CHIP	1K	5%	1/10W	
R395		1-216-022-00	RES,CHIP	75	5%	1/10W	
R398		1-216-295-91	SHORT				
R399		1-216-295-91	SHORT				
R400		1-247-863-91	CARBON	22K	5%	1/4W	
R401		1-249-441-11	CARBON	100K	5%	1/4W	
R402		1-247-815-91	CARBON	220	5%	1/4W	
R403		1-216-073-00	RES,CHIP	10K	5%	1/10W	
R404		1-216-073-00	RES,CHIP	10K	5%	1/10W	
R405		1-247-807-31	CARBON	100	5%	1/4W	
R409		1-247-863-91	CARBON	22K	5%	1/4W	
R410		1-216-077-00	RES,CHIP	15K	5%	1/10W	
R411		1-247-903-00	CARBON	1M	5%	1/4W	
R412		1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R415		1-247-815-91	CARBON	220	5%	1/4W	
R422		1-249-436-11	CARBON	39K	5%	1/4W	
R423		1-249-431-11	CARBON	15K	5%	1/4W	
R424		1-247-863-91	CARBON	22K	5%	1/4W	
R426		1-249-425-11	CARBON	4.7K	5%	1/4W	
R428		1-249-425-11	CARBON	4.7K	5%	1/4W	
R429		1-249-427-11	CARBON	6.8K	5%	1/4W	
R433		1-249-427-11	CARBON	6.8K	5%	1/4W	
R440		1-216-049-91	RES,CHIP	1K	5%	1/10W	
R441		1-216-097-91	RES,CHIP	100K	5%	1/10W	
R442		1-216-083-00	RES,CHIP	27K	5%	1/10W	
R443		1-216-053-00	RES,CHIP	1.5K	5%	1/10W	
R444		1-216-089-91	RES,CHIP	47K	5%	1/10W	
R445		1-216-062-00	RES,CHIP	3.6K	5%	1/10W	
R446		1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R448		1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R460		1-249-429-11	CARBON	10K	5%	1/4W	
R461		1-249-429-11	CARBON	10K	5%	1/4W	
R501		1-247-843-11	CARBON	3.3K	5%	1/4W	
R502	⚠	1-216-480-11	METAL OXIDE	820	5%	3W	F
R503	⚠	1-249-426-11	CARBON	5.6K	5%	1/4W	F
R506	⚠	1-215-885-00	METAL OXIDE	68	5%	2W	F
R507	⚠	1-260-099-11	CARBON	1K	5%	1/2W	
R509	⚠	1-216-480-11	METAL OXIDE	820	5%	3W	F
R512	⚠	1-215-910-00	METAL OXIDE	68	5%	3W	F
R513	⚠	1-215-908-00	METAL OXIDE	33	5%	3W	F
R520	⚠	1-215-861-00	METAL OXIDE	47	5%	1W	F
R521		1-249-411-11	CARBON	330	5%	1/4W	
R522		1-249-415-11	CARBON	680	5%	1/4W	
R523		1-216-073-00	RES,CHIP	10K	5%	1/10W	
R524		1-249-429-11	CARBON	10K	5%	1/4W	

A

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding x-ray radiation. Should replacement be required, replace only with the value originally used.

REF. NO.	PART NO.	DESCRIPTION		REMARK		
R525	1-249-427-11	CARBON	6.8K	5%	1/4W	
R526	1-216-081-00	RES,CHIP	22K	5%	1/10W	
R527	1-216-079-00	RES,CHIP	18K	5%	1/10W	
R528	1-249-421-11	CARBON	2.2K	5%	1/4W	
R529	1-216-103-00	RES,CHIP	180K	5%	1/10W	
R530	1-216-097-91	RES,CHIP	100K	5%	1/10W	
R532	1-215-437-00	METAL	4.7K	1%	1/4W	
R533	1-215-461-00	METAL	47K	1%	1/4W	
R534	1-215-451-00	METAL	18K	1%	1/4W	
R535	1-249-441-11	CARBON	100K	5%	1/4W	
R540	1-249-421-11	CARBON	2.2K	5%	1/4W	
		(ALL EXCEPT KV-25FV10C)				
R541	1-249-429-11	CARBON	10K	5%	1/4W	
R542	1-249-429-11	CARBON	10K	5%	1/4W	
R543	1-249-429-11	CARBON	10K	5%	1/4W	
R544	1-216-351-00	METAL OXIDE	1.5	5%	1W	F
R546 ⚠	1-215-890-11	METAL OXIDE	470	5%	2W	F
R547 ⚠	1-249-385-11	CARBON	2.2	5%	1/4W	F
R548	1-249-429-11	CARBON	10K	5%	1/4W	
R549	1-249-429-11	CARBON	10K	5%	1/4W	
R552	1-247-887-00	CARBON	220K	5%	1/4W	
R553	1-260-312-11	CARBON	47	5%	1/2W	
R556	1-216-113-00	RES,CHIP	470K	5%	1/10W	
R557	1-216-085-00	RES,CHIP	33K	5%	1/10W	
R558	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R559	1-216-133-00	RES,CHIP	3.3M	5%	1/10W	
R561 ⚠	1-249-377-11	CARBON	0.47	5%	1/4W	F
R562 ⚠	1-260-288-11	CARBON	0.47	5%	1/2W	
R571 ⚠	1-216-365-00	METAL OXIDE	0.47	5%	2W	F
R572	1-249-429-11	CARBON	10K	5%	1/4W	
R573	1-247-895-91	CARBON	470K	5%	1/4W	
R574 ⚠	1-249-416-11	CARBON	820	5%	1/4W	F
R575	1-247-895-91	CARBON	470K	5%	1/4W	
R576	1-249-441-11	CARBON	100K	5%	1/4W	
R577	1-249-429-11	CARBON	10K	5%	1/4W	
R578 ⚠	1-215-902-11	METAL OXIDE	47K	5%	1W	F
R579 ⚠	1-208-777-11	RES,CHIP	620	0.50%	1/10W	
⧓ R582 ⚠	1-208-806-11	RES,CHIP	10K	0.50%	1/10W	
R583 ⚠	1-249-441-11	CARBON	100K	5%	1/4W	
⧓ R584 ⚠	1-208-828-11	RES,CHIP	82K	0.50%	1/10W	
R585 ⚠	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R586 ⚠	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R587 ⚠	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R588	1-216-295-91	SHORT				
R590	1-216-105-91	RES,CHIP	220K	5%	1/10W	
R591 ⚠	1-215-882-00	METAL OXIDE	22	5%	2W	F
R592	1-216-119-00	RES,CHIP	820K	5%	1/10W	
R642	1-249-437-11	CARBON	47K	5%	1/4W	
R656	1-249-415-11	CARBON	680	5%	1/4W	
R659 ⚠	1-216-387-11	METAL OXIDE	0.68	5%	3W	F
R667 ⚠	1-216-387-11	METAL OXIDE	0.68	5%	3W	F
R673	1-249-421-11	CARBON	2.2K	5%	1/4W	
R674	1-247-863-91	CARBON	22K	5%	1/4W	
R690 ⚠	1-216-355-11	METAL OXIDE	3.3	5%	1W	F
R870	1-249-429-11	CARBON	10K	5%	1/4W	
R871	1-216-295-91	SHORT				
R873	1-249-415-11	CARBON	680	5%	1/4W	
R874	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R875	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R900	1-216-041-00	RES,CHIP	470	5%	1/10W	
R901	1-216-067-00	RES,CHIP	5.6K	5%	1/10W	
R904	1-216-067-00	RES,CHIP	5.6K	5%	1/10W	
R905	1-216-081-00	RES,CHIP	22K	5%	1/10W	
R906	1-216-091-00	RES,CHIP	56K	5%	1/10W	
R907	1-216-071-00	RES,CHIP	8.2K	5%	1/10W	
R908	1-216-081-00	RES,CHIP	22K	5%	1/10W	
R909	1-216-091-00	RES,CHIP	56K	5%	1/10W	
R912	1-216-295-91	SHORT				
R920	1-216-085-00	RES,CHIP	33K	5%	1/10W	
R921	1-216-085-00	RES,CHIP	33K	5%	1/10W	

SWITCH

S001	1-692-431-21	SWITCH, TACTILE
S002	1-692-431-21	SWITCH, TACTILE
S003	1-692-431-21	SWITCH, TACTILE
S004	1-692-431-21	SWITCH, TACTILE
S005	1-692-431-21	SWITCH, TACTILE
S006	1-692-431-21	SWITCH, TACTILE
S008	1-762-816-11	SWITCH, TACTILE
S010	1-762-816-11	SWITCH, TACTILE

SWITCH

SW501	1-572-707-11	SWITCH, LEVER

TRANSFORMER

T501 ⚠	1-437-210-11	TRANSFORMER, HORIZONTAL DRIVE
T503 ⚠	1-426-981-11	TRANSFORMER, FERRITE (PMT)
T504 ⚠	1-431-693-11	TRANSFORMER, HORIZONTAL LINEAR
T505 ⚠	1-453-306-11	FBT ASSY NX-4011//X4J4

TUNER

TU101 ⚠	8-598-431-00	TUNER, FSS BTF-WA411

CRYSTAL

X001	1-767-487-11	VIBRATOR, CRYSTAL
X301	1-567-505-11	OSCILLATOR, CRYSTAL

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

G

REF. NO.	PART NO.	DESCRIPTION	REMARK

G

	PART NO.	DESCRIPTION
*	A-1311-737-A	G (VAR) MOUNTED PC BOARD (KV-24FV10 ONLY)
*	A-1311-754-A	G (VAR) MOUNTED PC BOARD (ALL EXCEPT KV-24FV10)
	1-533-223-11	HOLDER, FUSE
*	4-374-846-01	COVER, CAPACITOR, CAP TYPE
	4-382-854-11	SCREW (M3X10), P, SW (+)

CAPACITOR

REF. NO.		PART NO.	DESCRIPTION			
C600	⚠	1-136-311-51	FILM (KV-24FV10 ONLY)	0.47MF	20%	125V
C600	⚠	1-136-311-61	FILM (ALL EXCEPT KV-24FV10)	0.47MF	20%	300V
C601		1-130-495-00	MYLAR	0.1MF	5%	50V
C602		1-126-967-11	ELECT	47MF	20%	50V
C604		1-130-471-00	MYLAR	0.001MF	5%	50V
C606	⚠	1-113-924-11	CERAMIC	0.0047MF	20%	250V
C607		1-136-311-51	FILM (KV-24FV10 ONLY)	0.47MF	20%	125V
C607		1-136-311-61	FILM (ALL EXCEPT KV-24FV10)	0.47MF	20%	300V
C609		1-126-968-11	ELECT	100MF	20%	50V
C610		1-126-964-11	ELECT	10MF	20%	50V
C611	⚠	1-113-924-11	CERAMIC	0.0047MF	20%	250V
C613	⚠	1-128-718-11	ELECT (ALL EXCEPT KV-24FV10)	560MF	20%	400V
C613	⚠	1-128-717-11	ELECT (KV-24FV10 ONLY)	680MF	20%	250V
C614		1-126-964-11	ELECT	10MF	20%	50V
C615		1-130-495-00	FILM	0.1MF	5%	50V
C616		1-130-202-00	FILM (ALL EXCEPT KV-24FV10)	0.022MF	10%	400V
C617		1-107-824-11	CERAMIC (ALL EXCEPT KV-24FV10)	220PF	5%	1KV
C618		1-125-893-11	FILM	680PF	3%	1.5KV
C620		1-164-081-11	CERAMIC	470PF	10%	50V
C621		1-136-356-11	FILM	470PF	5%	50V
C622		1-130-471-00	MYLAR	0.001MF	5%	50V
C623		1-104-665-11	ELECT	100MF	20%	25V
C624		1-125-772-91	CERAMIC	1500PF	10%	2KV
C625		1-164-625-11	CERAMIC	680PF	10%	500V
C626		1-164-625-11	CERAMIC	680PF	10%	500V
C630		1-124-347-00	ELECT	100MF	20%	160V
C631		1-126-944-11	ELECT	3300MF	20%	25V
C632		1-126-943-11	ELECT	2200MF	20%	25V
C633		1-104-341-11	FILM	0.1MF	10%	250V
C636		1-133-924-11	CERAMIC (KV-24FV10 ONLY)	.0047MF	20%	250V
C637		1-133-924-11	CERAMIC (KV-24FV10 ONLY)	0.0047MF	20%	250V
C643		1-113-924-11	CERAMIC	0.0047MF	20%	250V
C644		1-113-924-11	CERAMIC	0.0047MF	20%	250V
C645		1-137-605-11	FILM	0.01MF	10%	250V
C647		1-130-471-00	MYLAR	0.001MF	5%	50V
C649		1-126-970-11	ELECT	330MF	20%	50V
C650		1-130-471-00	MYLAR	0.001MF	5%	50V
C651		1-130-467-00	MYLAR	470PF	5%	50V
C652		1-126-965-11	ELECT	22MF	20%	50V
C653		1-107-636-11	ELECT	10MF	20%	160V
C656		1-107-679-91	ELECT	10MF	20%	450V
C658		1-130-491-00	MYLAR	0.047MF	5%	50V
C659		1-162-599-12	CERAMIC	0.0047MF		250V
C660		1-162-599-12	CERAMIC	0.0047MF		250V
C661		1-162-599-12	CERAMIC	0.0047MF		250V
C662		1-162-599-12	CERAMIC	0.0047MF		250V
C663		1-136-346-51	FILM (KV-24FV10 ONLY)	0.22MF	20%	125V
C663		1-136-346-61	FILM (ALL EXCEPT KV-24FV10)	0.22MF	20%	300V

CONNECTOR

REF. NO.		PART NO.	DESCRIPTION
CN601	*	1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P
CN602	*	1-580-843-11	PIN, CONNECTOR (POWER)
CN641	*	1-564-513-11	PLUG, CONNECTOR 10P
CN642	*	1-564-507-11	PLUG, CONNECTOR 4P
CN645	*	1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P

DIODE

REF. NO.		PART NO.	DESCRIPTION
D601		8-719-991-33	DIODE 1SS133T-77
D602		8-719-991-33	DIODE 1SS133T-77
D603		8-719-982-26	DIODE MTZJ-33B
D604		8-719-028-72	DIODE RGP02-17EL-6433
D605	⚠	8-719-510-53	DIODE D4SB60L
D606	⚠	8-719-108-18	THYRISTOR 5P6M
D607		8-719-991-33	DIODE 1SS133T-77
D608		8-719-110-53	DIODE RD20ESB2
D609		8-719-311-31	DIODE RU-1P (ALL EXCEPT KV-24FV10)
D610		8-719-510-02	DIODE D1NS4
D611		8-719-063-70	DIODE D1NL20U
D612		8-719-110-17	DIODE RD10ESB2
D613		8-719-063-70	DIODE D1NL20U
D614		8-719-063-70	DIODE D1NL20U

G

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

REF. NO.		PART NO.	DESCRIPTION		REMARK
D615		8-719-312-10	DIODE RU4AM-T3		
D617		8-719-510-37	DIODE D5LC20U		
D618		8-719-110-31	DIODE RD12ESB2		
D619		8-719-991-33	DIODE 1SS133T-77		
D620		8-719-110-17	DIODE RD10ESB2		
D630		8-719-510-37	DIODE D5LC20U		
D631		8-719-911-55	DIODE U05G		
D632		8-719-911-55	DIODE U05G		
D633		8-719-948-45	DIODE ERA22-08		
D634		8-719-991-33	DIODE 1SS133T-77		
D635		8-719-991-33	DIODE 1SS133T-77		
D636		8-719-063-70	DIODE D1NL20U		
D637		8-719-110-03	DIODE RD7.5ESB2		
D638		8-719-510-48	DIODE D1N20R		
			FUSE		
F600	⚠	1-576-193-11	FUSE 6.3A/125V (KV-24FV10 ONLY)		
F600	⚠	1-532-506-51	FUSE 6.3A/250V (ALL EXCEPT KV-24FV10)		
			FERRITE BEAD		
FB600		1-412-911-11	FERRITE		
FB601		1-412-911-11	FERRITE		
FB602		1-412-911-11	FERRITE		
FB603		1-412-911-11	FERRITE		
FB604		1-412-911-11	FERRITE		
FB605		1-412-911-11	FERRITE		
FB606		1-412-911-11	FERRITE		
FB609		1-412-911-11	FERRITE		
			IC		
IC601	⚠	8-749-014-48	IC STR-F6656 (ALL EXCEPT KV-24FV10)		
IC601	⚠	8-749-015-61	IC STR-F6626 (KV-24FV10 ONLY)		
IC602	⚠	8-749-920-61	IC SE135N-LF12		
			COIL		
L642		1-412-529-11	INDUCTOR	22UH	
L644		1-412-529-11	INDUCTOR	22UH	
			PHOTO COUPLER		
PH600	⚠	8-749-010-64	PHOTO COUPLER PC123FY2		

REF. NO.		PART NO.	DESCRIPTION				REMARK
			TRANSISTOR				
Q601		8-729-922-37	TRANSISTOR 2SD2144S-UVW				
Q602		8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q603		8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q605	⚠	8-729-044-30	TRANSISTOR 2SK2845-LB102				
Q606		8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q607		8-729-922-37	TRANSISTOR 2SD2144S-UVW				
Q610		8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q644		8-729-119-78	TRANSISTOR 2SC2785-HFE				
			RESISTOR				
R600	⚠	1-247-289-00	CARBON (ALL EXCEPT KV-24FV10)	8.2M	5%	1W	
R601	⚠	1-219-513-11	CARBON (KV-24FV10 ONLY)	4.7M	5%	1/2W	
R602	⚠	1-249-389-11	CARBON	4.7	5%	1/4W	F
R603		1-215-485-00	METAL	470K	1%	1/4W	
R607		1-215-859-00	METAL OXIDE	22	5%	1W	F
R608		1-240-205-11	CARBON	22M	5%	1/2W	
R609		1-249-421-11	CARBON	2.2K	5%	1/4W	
R610		1-249-429-11	CARBON	10K	5%	1/4W	
R611		1-249-437-11	CARBON	47K	5%	1/4W	
R612		1-249-415-11	CARBON	680	5%	1/4W	
R613	⚠	1-219-512-11	CARBON	2.2M	5%	1/2W	
R614		1-249-413-11	CARBON	470	5%	1/4W	
R616	⚠	1-260-302-51	CARBON	6.8	5%	1/2W	
R617		1-247-791-91	CARBON	22	5%	1/4W	
R623		1-249-440-11	CARBON	82K	5%	1/4W	
R624		1-249-437-11	CARBON	47K	5%	1/4W	
R626		1-249-417-11	CARBON	1K	5%	1/4W	
R627	⚠	1-240-251-11	CMT,MELF	6.8	5%	10W	
R628		1-249-441-11	CARBON	100K	5%	1/4W	
R629	⚠	1-260-324-11	CARBON	470	5%	1/2W	
R630	⚠	1-249-429-11	CARBON	10K	5%	1/4W	F
R631		1-249-437-11	CARBON	47K	5%	1/4W	
R632	⚠	1-202-933-61	FUSIBLE	0.1	10%	1/2W	F
R633		1-215-483-00	METAL (KV-24FV10 ONLY)	390K	1%	1/4W	
R633		1-215-479-00	METAL (ALL EXCEPT KV-24FV10)	270K	1%	1/4W	
R634		1-215-479-00	METAL (ALL EXCEPT KV-24FV10)	270K	1%	1/4W	
R636		1-249-421-11	CARBON	2.2K	5%	1/4W	
R637	⚠	1-215-929-11	METAL OXIDE (ALL EXCEPT KV-24FV10)	100K	5%	3W	F
R639	⚠	1-216-361-21	METAL OXIDE	0.22	5%	2W	F
R640		1-249-415-11	CARBON	680	5%	1/4W	

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

G C

REF. NO.		PART NO.	DESCRIPTION				REMARK
R641		1-249-429-11	CARBON	10K	5%	1/4W	
R642		1-249-421-11	CARBON	2.2K	5%	1/4W	
R646		1-216-485-11	METAL OXIDE (ALL EXCEPT KV-24FV10)	5.6K	5%	3W	F
R647		1-249-399-11	CARBON	33	5%	1/4W	
R648		1-249-421-11	CARBON	2.2K	5%	1/4W	
R649		1-249-417-11	CARBON	1K	5%	1/4W	
R650	⚠	1-216-362-11	METAL OXIDE	0.27	5%	2W	F
R651		1-249-419-11	CARBON	1.5K	5%	1/4W	
R652		1-247-843-11	CARBON	3.3K	5%	1/4W	
R653		1-215-898-11	METAL OXIDE	10K	5%	2W	F
R654		1-249-419-11	CARBON	1.5K	5%	1/4W	
R657		1-249-417-11	CARBON	1K	5%	1/4W	
R660		1-249-429-11	CARBON	10K	5%	1/4W	
R662		1-249-417-11	CARBON	1K	5%	1/4W	
R664		1-249-417-11	CARBON	1K	5%	1/4W	
R665		1-249-429-11	CARBON	10K	5%	1/4W	
R672		1-216-485-11	METAL OXIDE (ALL EXCEPT KV-24FV10)	5.6K	5%	3W	F
R674	⚠	1-216-485-11	METAL OXIDE (ALL EXCEPT KV-24FV10)	5.6K	5%	3W	F
R674	⚠	1-215-924-00	METAL OXIDE (KV-24FV10 ONLY)	15K	5%	3W	F

RELAY

RY601	⚠	1-755-018-11	RELAY
RY602	⚠	1-755-266-11	RELAY, AC POWER

TRANSFORMER

T601	⚠	1-426-717-11	TRANSFORMER, LINE FILTER (LFT) (KV-24FV10 ONLY)
T602	⚠	1-426-717-11	TRANSFORMER, LINE FILTER (ALL EXCEPT KV-24FV10)
T602	⚠	1-431-838-11	TRANSFORMER, LINE FILTER (KV-24FV10 ONLY)
T603	⚠	1-433-807-11	TRANSFORMER, REGULATOR (ALL EXCEPT KV-24FV10)
T603	⚠	1-433-806-11	TRANSFORMER, REGULATOR (KV-24FV10 ONLY)
T604	⚠	1-431-852-11	TRANSFORMER, CONVERTER (SRT)

THERMISTOR

TH605	⚠	1-803-586-11	THERMISTOR
THP601	⚠	1-803-540-11	THERMISTOR (ALL EXCEPT KV-24FV10)
THP601	⚠	1-809-539-11	THERMISTOR, POSITIVE (KV-24FV10 ONLY)

REF. NO.		PART NO.	DESCRIPTION	REMARK

VARISTOR

VDR600	⚠	1-803-587-11	VARISTOR ALL EXCEPT KV-24FV10)
VDR600	⚠	1-803-585-11	VARISTOR (KV-24VF10 ONLY)

C

*	**A-1331-898-A**	**C MOUNTED PC BOARD**
	7-682-949-01	**SCREW (M3X10), P, SW (+)**

CAPACITOR

C1751	1-107-652-11	ELECT	10MF	20%	250V
C1752	1-162-114-00	CERAMIC	0.0047MF		2KV
C1755	1-107-649-11	ELECT	2.2MF	20%	250V
C1777	1-107-698-11	ELECT	10MF	20%	25V

CONNECTOR

CN1707	*	1-564-506-11	PLUG, CONNECTOR 3P
CN1751	*	1-564-508-11	PLUG, CONNECTOR 5P
CN1752	*	1-564-510-11	PLUG, CONNECTOR 7P
CN1753		1-695-915-11	TAB (CONTACT)
CN1755		1-695-915-11	TAB (CONTACT)

DIODE

D1754	8-719-901-83	DIODE 1SS83
D1755	8-719-901-83	DIODE 1SS83
D1756	8-719-901-83	DIODE 1SS83
D1758	8-719-302-43	DIODE EL1Z

IC

IC1707	8-759-603-37	IC M5216P
IC1751	8-759-562-43	IC TDA6108JF/N1B

JACK

J1751	⚠	1-540-071-22	SOCKET, CRT

COIL

L1751	1-408-613-31	INDUCTOR	68UH

C V

REF. NO.	PART NO.	DESCRIPTION				REMARK
	RESISTOR					
R1756	1-260-099-11	CARBON	1K	5%	1/2W	
R1757	1-260-099-11	CARBON	1K	5%	1/2W	
R1758	1-260-099-11	CARBON	1K	5%	1/2W	
R1759	1-260-087-11	CARBON	100	5%	1/2W	
R1760	1-260-123-11	CARBON	100K	5%	1/2W	
R1761 ⚠	1-216-373-11	METAL OXIDE	2.2	5%	2W	F
R1762 ⚠	1-216-375-00	METAL OXIDE	3.3	5%	2W	F
R1763	1-247-807-31	CARBON	100	5%	1/4W	
R1764	1-247-807-31	CARBON	100	5%	1/4W	
R1765	1-247-807-31	CARBON	100	5%	1/4W	
R1770	1-260-132-11	CARBON	560K	5%	1/2W	
R1777	1-247-843-11	CARBON	3.3K	5%	1/4W	
R1778	1-249-429-11	CARBON	10K	5%	1/4W	
R1780	1-247-863-91	CARBON	22K	5%	1/4W	
R1781	1-247-863-91	CARBON	22K	5%	1/4W	
	VARIABLE RESISTOR					
RV1750	1-241-714-11	RES, ADJ, METAL FILM 110M				

V

REF. NO.	PART NO.	DESCRIPTION				REMARK
*	**A-1342-465-A**	**V MOUNTED PC BOARD**				
	7-682-949-01	**SCREW (M3X10), P, SW (+)**				
	CAPACITOR					
C961	1-161-830-00	CERAMIC	0.0047MF		500V	
C962	1-130-491-00	MYLAR	0.047MF	5%	50V	
C963	1-107-638-11	ELECT	33MF	20%	160V	
C964	1-126-925-11	ELECT	470MF	20%	10V	
C968	1-106-383-00	MYLAR	0.047MF	10%	200V	
C969	1-107-667-11	ELECT	2.2MF	20%	160V	
C970	1-104-999-11	MYLAR	0.1MF	10%	200V	
C972	1-126-941-11	ELECT	470MF	20%	25V	
C973	1-130-491-00	MYLAR	0.047MF	5%	50V	
C975	1-126-925-11	ELECT	470MF	20%	10V	
C978	1-130-471-00	MYLAR	0.001MF	5%	50V	
C979	1-130-471-00	MYLAR	0.001MF	5%	50V	
C980	1-104-665-11	ELECT	100MF	20%	10V	
	CONNECTOR					
CN961 *	1-564-510-11	PLUG, CONNECTOR 7P				
CN962 *	1-770-723-11	CONNECTOR, BOARD TO BOARD 8P				
	DIODE					
D964	8-719-991-33	DIODE 1SS133T-77				
D967	8-719-110-88	DIODE RD39ESB2				
D968	8-719-110-88	DIODE RD39ESB2				
	TRANSISTOR					
Q961	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q962	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q963	8-729-017-05	TRANSISTOR 2SA1837				
Q965	8-729-017-06	TRANSISTOR 2SC4793				
Q967	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q968	8-729-119-76	TRANSISTOR 2SA1175-HFE				
	RESISTOR					
R962	1-249-401-11	CARBON	47	5%	1/4W	
R963	1-249-417-11	CARBON	1K	5%	1/4W	
R964	1-260-312-11	CARBON	47	5%	1/2W	
R965	1-249-414-11	CARBON	560	5%	1/4W	F
R966	1-249-417-11	CARBON	1K	5%	1/4W	
R967	1-249-410-11	CARBON	270	5%	1/4W	
R968	1-249-417-11	CARBON	1K	5%	1/4W	
R969	1-249-386-11	CARBON	2.7	5%	1/4W	F
R970	1-249-403-11	CARBON	68	5%	1/4W	
R971	1-247-815-91	CARBON	220	5%	1/4W	
R972	1-249-432-11	CARBON	18K	5%	1/4W	
R973	1-249-403-11	CARBON	68	5%	1/4W	
R974	1-216-476-11	METAL OXIDE	180	5%	3W	F
R975	1-249-417-11	CARBON	1K	5%	1/4W	F
R976	1-249-432-11	CARBON	18K	5%	1/4W	
R977	1-249-429-11	CARBON	10K	5%	1/4W	
R978	1-247-807-31	CARBON	100	5%	1/4W	
R979	1-249-414-11	CARBON	560	5%	1/4W	F
R980	1-247-807-31	CARBON	100	5%	1/4W	
R981	1-249-416-11	CARBON	820	5%	1/4W	
R982	1-249-386-11	CARBON	2.7	5%	1/4W	F
R985	1-249-401-11	CARBON	47	5%	1/4W	F
R986	1-249-397-11	CARBON	22	5%	1/4W	F

REF. NO.	PART NO.	DESCRIPTION	REMARK

ACCESSORIES AND PACKAGING

REF. NO.	PART NO.	DESCRIPTION	REMARK
	1-418-387-11	REMOTE COMMANDER (RM-Y168)	
	4-978-977-01	BATTERY COVER (FOR REMOTE)	
	3-866-872-41	MANUAL, INSTRUCTION (KV-25FV10 ONLY)	
	3-866-075-41	MANUAL, INSTRUCTION (KV-25FV10C ONLY)	
	3-866-871-21	MANUAL, INSTRUCTION (KV-24FV10 ONLY)	
*	4-041-255-01	BAG, PROTECTION	
*	4-067-890-01	CARTON, INDIVIDUAL (KV-25FV10/10C ONLY)	
*	4-067-891-01	CARTON, INDIVIDUAL (KV-24FV10 ONLY)	
*	4-067-892-01	CUSHION ASSY, UPPER	
*	4-067-893-01	CUSHION ASSY, LOWER	
	1-501-730-41	ANTENNA, TELESCOPIC	
	1-417-182-11	CONVERTER (EAC 25)	

NOTES:

9-965-853-01

Sony Corporation

Sony Technology Center

Product Quality Division

Service Promotion Department

English

99CS74400-1

Printed in U.S.A.

Self Diagnosis Supported model

SERVICE MANUAL

BA-4C CHASSIS

MODEL	COMMANDER	DEST	CHASSIS NO.
KV-24FV10	*RM-Y168*	*US*	*SCC-S22A-A*
KV-24FV10	*RM-Y168*	*CND*	*SCC-S24A-A*
KV-25FV10	*RM-Y168*	*E*	*SCC-S23A-A*
KV-25FV10C	*RM-Y168*	*E*	*SCC-S23C-A*

SUPPLEMENT-1

SUBJECT: New Microprocessor Part Number

Correct the service manual as shown.
File this supplement with the service manual.

TRINITRON® COLOR TV

SONY®

For models with the following serial numbers only:

KV-24FV10(U) .... S/N 8010620 and below
KV-24FV10(CND) .... S/N A800999 and below
KV-25FV10 .... Units produced before July ‘99
KV-25FV10C (IQUIQUE) .... S/N 8001902 and below
KV-25FV10C (VALPARAISO) .... S/N 8002158 and below

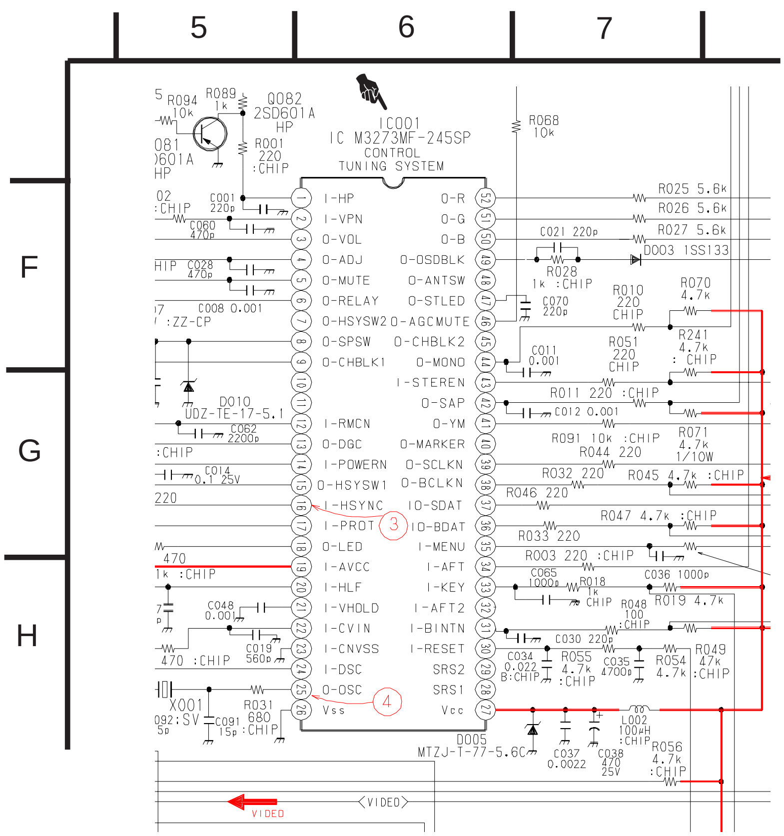
Section 8: ELECTRICAL PARTS LIST (Page 56)

Old				New			
REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
IC001	8-759-594-76	M37273MF-245SP		IC001	8-759-577-92	M37273MF-253SP	

Section 6: A BOARD SCHEMATIC DIAGRAM (Page 35)

☛ : Modified item

A BOARD PWB PART NO. 1-873-185-11



For models with the following serial numbers only:

KV-24FV10(U) .... S/N 8010621 and up
KV-24FV10(CND) .... S/N A801000 and up
KV-25FV10 .... Units produced in July ‘99 and later
KV-25FV10C (IQUIQUE) .... S/N 8001903 and up
KV-25FV10C (VALPARAISO) .... S/N 8002159 and up

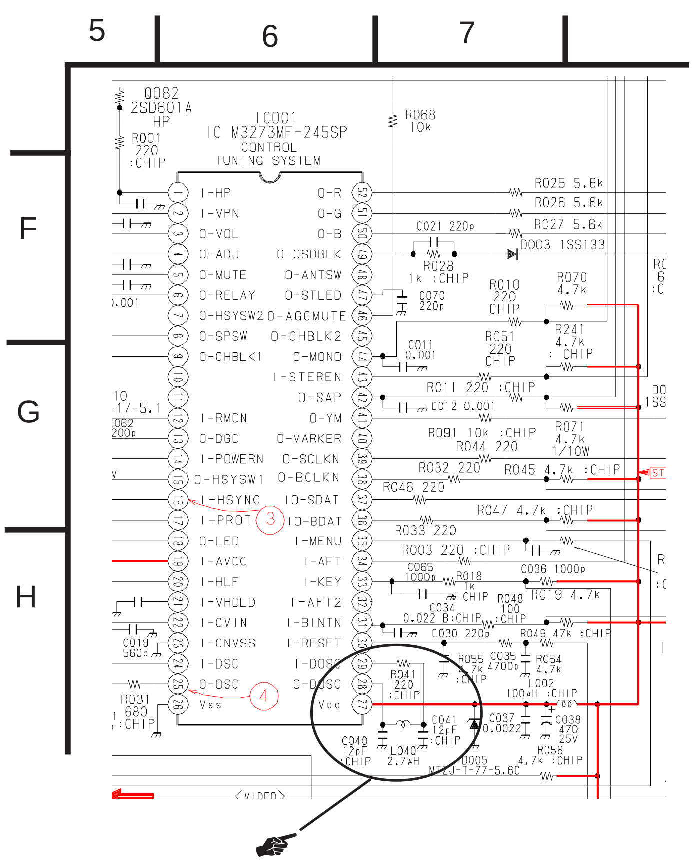
Section 8: ELECTRICAL PARTS LIST (Page 53-57)

Old				New			
REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
Part Number missing ---------> need to add				C040	1-163-229-11	CERAMIC CHIP 12PF 5%	50V
Part Number missing ---------> need to add				C041	1-163-229-11	CERAMIC CHIP 12PF 5%	50V
Part Number missing ---------> need to add				L040	1-410-463-11	INDUCTOR 2.7UH	
Part Number missing ---------> need to add				R041	1-216-033-00	RES, CHIP 220 5%	1/10W

Section 6: A BOARD SCHEMATIC DIAGRAM (Page 35)

☛ : Modified item

A BOARD PWB PART NO. 1-873-185-12



9-965-853-81

SONY CORPORATION
Sony Technology Center
Product Quality Division
Service Promotion Department

English
99DJ74411-1
Printed in U.S.A.